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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the photographing terminal, the image processing server, photographing method, and image processing method which can transmit the image data obtained by photography to a remote server about a photographing terminal, an image processing server, a photographing method, and an image processing method.

[0002]

[Description of the Prior Art] There was a digital camera which photos the candidate for photography and generates image data from the former. Instead of the film used for a film photo, the photoed picture is generated as digital data and this saves it at memory storage.

[0003]

[Problem(s) to be Solved by the Invention] According to the above conventional digital cameras, a photograph was able to be taken only within the storage capacity of the memory storage which it had. Information acquirable at the time of photography is only the digital data of a picture, and all the information (for example, filming site) that should accompany a photograph had to be recorded by an another device and technique (for example, note).

[0004] Since image data is dependent on the memory storage with which the digital camera was equipped, it cannot perform efficient management. When arrangement of the image data or information which were photoed did not have people by its hand, it did not become.

[0005] Then, photography of this invention is possible for infinity as a matter of fact, without being dependent on the memory storage with which the camera was equipped, and it aims to let the additional information at the time of photography provide the photographing terminal, the image processing server, photographing method, and image processing method which are recorded simultaneously with photography.

[0006]

[Means for Solving the Problem] To achieve the above objects, the photographing terminal 100 by this invention, For example; as shown in drawing 2, A candidate for photography is photoed. Image data. The photographing part 114 to generate; said generated image data. the sending set 110 which transmits to real time at a remote server, and; --- having the additional information generating devices 111 and 115 which generate attached data about additional information besides said generated image data ---; --- it constitutes so that said attached data may be transmitted to said remote server with said image data.

[0007] The photographing terminal 100 is the device which included a function like an I mode (trademark) cellular phone in a digital camera typically.

[0008] The photographing part 114 which will photo a candidate for photography and will generate image data if constituted in this way, The sending set 110 which transmits image data to real time at a remote server, Since it has the additional information generating devices 111 and 115 which generate attached data about additional information besides image data and attached data is transmitted to a remote server with image data, If it not only becomes unnecessary to record additional information independently at the time of photography, but is a place connectable with a remote server, a photograph can be taken to infinity as a matter of fact.

[0009] Additional information is geographic information of a point currently photoed, for example, and attached data is filming site point specific data which pinpoints the point. It may be description of a picture and a sound of a filming site with a sound which let a microphone as explanation to a still photograph etc. pass, and input data and exposure time from a keyboard may be sufficient.

[0010] The image storage section 117 which saves said generated image data in the above-mentioned photographing terminal 100; Inside of a saved area of said image storage section 117, It may be made to have the controller 113 controlled to be able to save new image data with said sending set 110 in a saved area transmitted to a remote server.

[0011] Since it will have the controller 113 controlled to be able to save new image data with the sending set 110 in a saved area transmitted to a remote server among a saved area of the image storage section 117 and the

image storage section 117 if constituted in this way, Photography can be continued, when not connectable with a remote server, or even when transmission speed of the sending set 110 is slower than photography speed. Since new image data can be saved in a saved area transmitted to a remote server of the image storage section 117, a saved area of the image storage section 117 can be used efficiently.

[0012]Another photographing terminal 100 by this invention, For example, the image storage section 117 which saves image data by which the; aforementioned generation was carried out with the photographing instrument 114 which photos a candidate for photography and generates image data as shown in drawing 2; said saved image data, The outputting part 119 outputted to the sending set 110 which transmits to a remote server; Inside of a saved area of said image storage section 117, To a saved area transmitted to a remote server, with said sending set 110. the controller 113 controlled to be able to save new image data and; -- having the additional information generating devices 111 and 115 which generate attached data about additional information besides said generated image data --; -- it constitutes so that said attached data may be transmitted to said remote server with said image data.

[0013]Since it will have the outputting part 119 outputted to the sending set 110 which transmits saved image data to a remote server if constituted in this way, image data can be transmitted to a remote server.

[0014]The above photographing terminal 100 is good to have the input part 119 which inputs image data from a remote server.

[0015]And the above photographing terminal 100 may be provided with the buffer store part 122 between said image storage section 117 and said controller 113.

[0016]In the above photographing terminal 100, although a picture of image data is a still picture typically, it may be an animation.

[0017]In order to attain said purpose, the image processing server 200 by this invention, For example, as shown in drawing 3, Image data transmitted from the remote photographing terminal 100. The receive section 205 which receives; it has the image data storage section 208 which makes it correspond to user's information in the user's information database 210 which saves user's information concerning a user of said photographing terminal 100, and said; user database 210, and saves said image data which received.

[0018]The receive section 205 which will receive image data transmitted from the remote photographing terminal 100 if constituted in this way, Since it has the user's information database 210 which saves user's information concerning a user of a photographing terminal, and the image data storage section 208 which saves image data which made it correspond to user's information in the user database 210, and received, User's information and image data which received from the photographing terminal 100 can be made to be able to respond, and it can save efficiently at memory storage.

[0019]The described image processing server 200 is good to have the processing section 203 which processes image data saved at said image data storage section 208. Thereby, a server manager can respond for a user to ask and image data can be processed by the server side. When saving image data with processing at an image data storage section, for example, It says changing into a format for an output, when changing image data into a format for preservation, or responding for a user to ask and outputting image data, and also editing image data, such as trimming of image data, and text input.

[0020]The above image processing server 200 is good to have the outputting part 205 which a user responds in quest of said saved image data, and is outputted. Thereby, the user can pull out image data easily. Download performs a cash drawer of image data in a personal computer etc. typically.

[0021]In the above image processing server 200, although a picture of image data is a still picture typically, it may be an animation.

[0022]In order to attain said purpose, a photographing method by this invention, For example, as shown in drawing 7, The additional information generation process 708 of generating attached data about additional information besides image data by which the; aforementioned generation was carried out with the picture preservation process 712 of saving image data by which the; aforementioned generation was carried out with the photographing process 705 which photos a candidate for photography and generates image data; said saved image data, Difference of image data by which equips real time with the transmission process 710 which transmits to the remote server 200, and the; aforementioned generation is carried out with said attached data, and said image data transmitted is accumulated.

[0023]The additional information generation process 708 of generating attached data about additional information besides image data if constituted in this way, Since it has the transmission process 710 which transmits saved image data to the remote server 200 with attached data in real time, it becomes unnecessary to record additional information independently at the time of photography, and a user can be concentrated on photography.

[0024]Since it has the transmission process 710 which transmits image data to the remote server 200 in real time and difference of image data generated and image data transmitted is accumulated, By transmitting image data to the remote server 200 in real time, image data to save can be stopped to the minimum, and memory storage can be used efficiently. For this reason, the number of photography which can be photoed can be made

into infinity as a matter of fact. When image data is a video data, photography can be continued even if transmission speed is slower than photography speed.

[0025]Difference of image data generated and image data transmitted being accumulated is that difference of speed (suitably henceforth generation speed) by which a picture is generated, and speed (suitably henceforth transmitting speed) to which a picture is transmitted is accumulated. That is, if transmitting speed has always exceeded generation speed, image data will not be accumulated in the image storage section 117. It says that quantity of image data before transmission saved at the image storage section 117 increases accumulation.

[0026]In order to attain said purpose, an image processing method by this invention, For example, as shown in drawing 7, Image data transmitted from the remote photographing terminal 100. The receiving process 713 to receive and the user's information preservation process 715 of saving user's information concerning a user of the; aforementioned photographing terminal 100; it has the image data preservation process 717 of making it corresponding to said saved user's information, and saving said image data which received.

[0027]The work process 816 into which a described image disposal method processes said saved image data as shown, for example in drawing 8; it is good for a user to respond in quest of said processed image data, and to have the output process 817 to output.

[0028]

[Embodiment of the Invention]Hereafter, an embodiment of the invention is described with reference to drawings. Identical codes or similar numerals are given to the member which is mutually the same or corresponds in each figure, and the duplicate explanation is omitted.

[0029]Drawing 1 is a schematic block diagram of the taken image processing system (suitably henceforth an image processing system) which are a photographing terminal which is an embodiment by this invention, and an operations system constituted including an image processing server. Each user (it may be called a photography person or those who can be perused) who is going to use an image processing system operates the photographing terminals 100/1, 100/2, 100/3 or the reading terminal devices 101/1, 101/2, and 101/3. Hereafter, when need to distinguish each photographing terminal and it is not necessary to explain it, it is only called the photographing terminal 100, and when need to distinguish each reading terminal device and it is not necessary to explain it, it is only called the reading terminal device 101. The photographing terminal 100 and the reading terminal device 101 are connected to the image processing system with which the server 200 side was equipped via the network 99.

[0030]Typically, although the photographing terminal 100 is the device which included a function like an I mode (trademark) cellular phone in the digital camera, here, It may be the device which carried out the small weight saving by having only a function which eliminates a communication terminal for exclusive use, for example, the talking function of a cellular phone, etc., is image-data-transmitted or is received instead of a cellular phone. It may be made for the photographing terminal 100 to function also as the reading terminal device 101.

[0031]Although the reading terminal device 101 is a computer typically, it contains widely the cellular phone incorporating IC (an integrated circuit and LSI are also included) besides a personal computer, Web TV incorporating IC, and the information home appliance incorporating IC. That is, the reading terminal device 101 has the available Internet in the available existing general aviation.

[0032]The photography person who is a user photos the candidate for photography using this photographing terminal 100. The picture generated by photography will be transmitted to the server 200 installed outside, if it sees from the photographing terminal 100. Two or more photographing terminals 100 exist only the number of photography persons that is, at least. The network (it may only be called a network below) 99 can take not only computer networks, such as the Internet and a telephone line, but various gestalten, such as a TV radio wave, satellite internet, a cable line, and TV crevice electric wave. An image processing system is mounted on various computers, such as a personal computer as the server 200, a workstation, a mainframe, and it deals in it.

[0033]It may be directly connected through the circuit which constitutes the network 99, and the photographing terminal 100 and the reading terminal device 101, and the server 200 may be connected via the provider on a network. A provider may be plural. It may be directly connected by radio.

[0034]Drawing 2 is a block diagram showing the example of composition of the photographing terminal 100 which each user uses.

[0035]Using the operation input section 111 with which the photographing terminal 100 was equipped, operating instructions are emitted to the photographing terminal 100, or a user inputs the information at the time of photography, etc. The operation input sections 111 are a key, a microphone (when inputting a sound), a remote control, a touch screen, etc., for example.

[0036]In order to display the screen of an image processing system, the state of input and a device, etc., the information output part 112 with which the photographing terminal 100 was equipped is used. The information output part 112 is the display and printer of a liquid crystal display etc., for example. Although the operation input section 111 and the information output part 112 are illustrated as what is contained in the photographing terminal 100 at one, they may be a different body. It is connected to the control section 113 with which the photographing terminal 100 was equipped, and the operation input section 111 and the information output part

112 are controlled by the control section 113.

[0037]The photographing terminal 100 is provided with the photographing part 114 which takes a photograph and generates image data. It is connected to the control section 113 and the photographing part 114 is controlled by the control section 113. When a user photos the candidate for photography, the photographing part 114 is operated using the operation input section 111, and a photograph is taken. Image data is saved in transmission or the taken image database 118 (suitably henceforth DB) via the control section 113 to the server 200.

[0038]The photographing terminal 100 is provided with the GPS antenna 115 for receiving the position data of a photographing location. It is connected to the control section 113 and the GPS antenna 115 can receive the signal 102a from the artificial satellite 102. The control section 113 computes position data based on the signal 102a received from the GPS antenna 115, connects the computed position data (for example, latitude Ox**, longitude *****) with image data, and records it on transmission or taken image DB118. This position data is good for navigation systems, such as the existing car-navigation system, to make transmission possible. Since a navigation system can be used when other users go to the same photographing location by this, it can go to the photographing location easily.

[0039]The temporal data outputted from the information at the time of the photography inputted from the operation input section 111 at this time (for example, sound) and the clock part 116 connected to the control section 113 is also connected with image data, and is recorded on transmission or taken image DB118. What was given to image data by using such additional information as attached data is called photographed image data. The record to taken image DB118 of attached data is good to be made to carry out simultaneously with record of image data.

[0040]The communication interface 119 is connected to the control section 113, photographed image data is transmitted to the communication apparatus 110, or an image data file, information, a program module, etc. are received from the server 200. Furthermore the communication apparatus 110 is connected to the communication interface 119, and the data transmitted and received from the communication interface 119 is transmitted and received to the server 200. The communication apparatus 110 is a cellular phone with a function typically like an I mode (trademark). When the communication apparatus 110 is equipped with the input/output device (for example, operation input device) etc., it is good to enable it to operate the photographing terminal 100 even from the communication apparatus 110.

[0041]The image storage section 117 is connected to the control section 113, and taken image DB118 etc. which records the image data etc. which were not transmitted to the server 200 is saved at the image storage section 117 at it. The image data file, program module and use information which were downloaded from the server 200, the operation information on the photographing terminal 100, etc. can be saved at the image storage section 117. The image storage section 117 is an attachment-and-detachment type, and may be made exchangeable. Even when it is not ability ready for sending and image data is photoed to the storage capacity of the image storage section 117 to the server 200 by doing in this way, for example, photography becomes possible further by exchanging for another image storage section 117.

[0042]Between the control section 113 and the image storage section 117, it has the buffer store part 122. Since photography becomes possible by saving photographed image data in the buffer store part 122 also in the time of exchange of the above-mentioned image storage section 117 thereby, for example, a user does not miss the opportunity of photography of the incident which arises suddenly. When again equipped with the image storage section 117, the buffer store part 122 moves the saved photographed image data to the image storage section 117, and is controlled by the control section 113 to secure the capacity which can be saved as much as possible.

[0043]The image storage section 117 is controlled by the control section 113 to be able to save the photographed image data generated by new photography in the saved area of the photographed image data transmitted to the server 200 of taken image DB118.

[0044]The data input part 120 and the data output part 121 are connected to the control section 113. These data input/output parts 120 and 121 connect with computers, such as other photographing terminals 100 and a personal computer, a digital camera, etc., transmit and receive photographed image data etc. directly, or connect another communication devices (for example, modem etc.), and transmit and receive photographed image data etc. Input devices, such as a keyboard, can be connected to the data input part 120, and output units, such as a display and a printer, can be connected to the data output part 121.

[0045]Drawing 3 is a block diagram showing the example of composition of the image processing server 200 (suitably henceforth the server 200) connected with the photographing terminal 100 via the network 99. With this image processing server 200, the personal authentication system 207 which is an image processing system by the side of a server operates.

[0046]This system is mounted in the image processing server 200. This system can be mounted by various computers, such as a personal computer, a workstation, and a mainframe. The image processing server 200 is equipped with the control section 203 which controls an image processing system. The output unit 202 which outputs the result processed with the input device 201 which inputs the information for operating the image

processing server 200, and the image processing server 200 is connected to the image processing server 200. The input/output devices 201 and 202 are connected with the I/O interface 204 to the control section 203. The I/O interface 204 controls the input devices (keyboard etc.) 201 and the output units (display etc.) 202.

[0047]The communication interface 205 is connected to the control section 203, and photographed image data is further received via the network 99 via this from the photographing terminal 100 which each user uses. Various information about an image data file or an image processing system is transmitted and received to the photographing terminal 100 and the reading terminal device 101 which each user uses.

[0048]The control section 203 is provided with the personal authentication system control section 207 (suitably henceforth a personal authentication system) which is an image processing system mounted in the image processing server 200 which a user uses. The personal authentication system control section 207 is accessed by the user via the network 99, and can download only a required portion now to a user's device if needed. The personal authentication system part 207 is used, when a user transmits photographed image data or the transmitted picture is perused.

[0049]According to this embodiment, in this system, the personal authentication module, the image-processing module, and the picture inspection module are contained. These modules are not limited to the module which chose the required thing suitably, and should just constitute the system, and was mentioned here.

[0050]The memory storage 206 which memorizes information required for an image processing system and data is connected to the control section 203. According to this embodiment, the memory storage 206 contains the image storage section 208, the user's information database 210, the temporary storage database, the picture inspection database, and the map data base. Neither the database saved at the memory storage 206 nor a file is limited to the thing quoted here. At the image storage section 208, the graphics file 209 which carried out the optimal processing for saving the photographed image data etc. which were received at the memory storage 206 is saved.

[0051]Although they were explained by this embodiment having saved the image storage section 208 and user's information DB210 at the memory storage 206 of the image processing server 200, As for the device 208 of a different body, for example, an image storage section, user's information DB210 is good also as a user's information server as a picture file server respectively.

[0052]Drawing 4 and drawing 5 are the block diagrams showing the outline of an example of the function of the personal authentication system 207. With reference to drawing 4, the case where a user transmits photographed image data to the image processing server 200 is explained.

[0053]The photography person who is a user transmits the photographed image data produced by photoing the candidate for photography to the personal authentication system 207 in the image processing server 200 with the photographing terminal 100 (drawing 2) (401). The photographed image data which a photography person's personal authentication information registered beforehand transmits at this time is made to correspond, and it is recorded.

[0054]The personal authentication system 207 which received the photography person's photographed image data saves photographed image data first at the temporary storage DB (402). Next, the personal authentication information on the saved photographed image data is checked, and this photography person's personal authentication information is read from user's information DB210 (403). If it judges that the personal authentication information received from the read personal authentication information is right, a part or all of information at the time of photography is read from photographed image data (404), and it saves user's information DB210 (405). Photographed image data carries out processing treatment to the optimal graphics file 209 for saving at the image storage section 208 (drawing 3), and saves it at the image storage section 208 (406). The preserved information of this graphics file 209 is also saved user's information DB210. The optimal graphics file for here saving is deleting it, after saving attached data, such as information at the time of photography, user's information DB210, and considering it only as image data for example. It may be made to make small the file size to save by changing into the state where image data was furthermore compressed.

[0055]Next, the case where the photography person or those who can be perused who is users peruses the picture saved at the image processing server 200 with reference to drawing 5 is explained. Those who can be perused refer to those who were allowed to peruse the image data which the photography person saves at the image processing server 200. The photography person can register those who can be perused for each [which has saved self at the image processing server 200] image data of every.

[0056]A user uses the reading terminal device 101 or the photographing terminal 100, transmits personal authentication information, and logs in to the personal authentication system 207 of the image processing server 200 (501). If a user logs in to the personal authentication system 207, he will demand image data to peruse etc. of the personal authentication system 207.

[0057]From the received personal authentication information, the personal authentication system 207 reads information required in order to meet the demand of users, such as a list of the image data saved from user's information DB210 at the image storage section 208 (502), and saves it at the temporary storage DB (503). And by reading stored information to the temporary storage DB, (504) and the required graphics file 209 are read

(505), and it saves at the temporary storage DB (503).

[0058]Next, the personal authentication system 207 reads information required to form a page for a user to peruse a picture from the picture inspection DB (506). An inspection page is formed from this, and the information and the graphics file 209 which are saved at the temporary storage DB. The user can peruse the picture saved from this inspection page at the image processing server 200. An inspection page is a homepage (for example, page formed by an HTML file) typically.

[0059]When a user peruses a picture and edit is added to a picture, the edited information is saved user's information DB210 (507), and the edited graphics file 209 is saved at the image storage section 208 (508). Registration of those who can be perused can be performed also here.

[0060]When a user downloads the graphics file 209, the personal authentication system 207 carries out change processing of the graphics file 209 to the format which a user demands, and downloads it to the reading terminal device 101 or the photographing terminal 100 (509).

[0061]The output of a picture is good to enable it for the output unit 202 (drawing 3) with which the image processing server 200 was equipped to also perform. For example, let the output unit 202 be a printing machine (for example, color copier) more expensive than a general aviation and highly efficient. And ordinary persons can also be provided now with a more nearly quality printing picture by outputting a picture using this printing machine.

[0062]When a user uses an image processing system, it is necessary to register with the personal authentication system 207 of the image processing server 200 first. Drawing 6 shows an example of processing in case a user registers with the personal authentication system 207 with a flow chart. The personal authentication module in the personal authentication system 207 performs processing of registration.

[0063]First, a user uses the photographing terminal 100 and connects with the image processing server 200 via the network 99 (drawing 1) (Step 601).

[0064]Next, a user transmits a user's own information, including a name, an address, a telephone number, a mail address, etc., the information on the photographing terminal 100 which the user is using, etc. to an input and the image processing server 200 (Step 602).

[0065]If the transmitted user's information is received (Step 603), a personal authentication module will be used for the personal authentication system 207 of the image processing server 200, and it will publish a user ID and a password (Step 604). And the user's information, user ID, and password which were received are registered into user's information DB210 (Step 605). A user ID and a password are transmitted to the photographing terminal 100 (Step 606).

[0066]The photographing terminal 100 receives the user ID and password which have been transmitted (Step 607). If you register into this storage device the user ID and password which were received at this time when the image storage section 117 or the communication apparatus 110 is provided with the storage device, whenever it connects with the personal authentication system 207, it becomes unnecessary to enter a user ID and a password, and is convenient.

[0067]Above, the registration to the personal authentication system 207 is completed (Step 608).

[0068]The user who completed registration to the personal information system of the image processing server 200 can use an image processing system. A user transmits the image data which photoed the candidate for photography and was generated to an image processing server, and drawing 7 shows an example of processing in the case of saving with a flow chart.

[0069]First, a photography person operates the photographing terminal 100, connects with the image processing server 200 via the network 99 (drawing 1) (Step 701), and transmits user authentication information (Step 702). Here, the communication between the photographing terminal 100 and the image processing server 200 is good to consider it as the packet communication currently used for the latest cellular phone etc. Since a telex rate is charged by this only at the data volume which communicated even if it is maintaining connection, the photography person can do photography, maintaining connection with the server 200 in comfort.

[0070]And the personal authentication system 207 of the image processing server 200 receives user authentication information (Step 703), and operates a personal authentication module. A personal authentication module compares the user authentication information currently recorded on user's information DB210 with the received user authentication information, checks a user, and maintains connection (Step 704). When operating the photographing terminal 100, or when photography is carried out, the above connecting operation can be set up so that the photographing terminal 100 may carry out automatically. If this setting out is carried out, a photography person can be concentrated on photography like the conventional camera, without being conscious of connection with the server 200.

[0071]Next, the candidate for photography is photoed (Step 705). At this time, a photography person inputs photographing instruction from the operation input section 111 (a shutter button is pushed). It operates and the shutter by which the photographing part 114 was equipped with the control section 113 with the inputted photographing instruction is photoed.

[0072]The image data obtained by photography is saved in the buffer store part 122 via the control section 113.

(Step 706). At this time, the control section 113 inputs the signal 102a which the GPS antenna 115 received, and computes the position data of a photographing location from this signal 102a (Step 707). And attached data is generated from the computed position data and the temporal data inputted from the clock part 116, and it relates with the saved image data, and saves in the buffer store part 122 as photographed image data (Step 708). Temporal data is the time of the photographing location where time difference was amended with the computed position data. The information at the time of the photography which a photography person inputs is recorded on attached data, when a photography person inputs information (for example, sound).

[0073]Next, as for the control section 113, photographed image data judges whether it is ability ready for sending to the image processing server 200 (Step 709). In the case of ability ready for sending, the (step 709 transmits photographed image data to Y) and the image processing server 200 (Step 710), and it goes into the next photography (Step 711). When it cannot transmit, the (step 709 saves N) and photographed image data taken image DB118 of the image storage section 117 (Step 712), and goes into the next photography (Step 711). The photographed image data saved taken image DB118 is automatically transmitted, immediately after becoming ability ready for sending except for the case where a photography person forbids transmission.

[0074]If the personal authentication system 207 of the image processing server 200 is received [photographed image data], after using a personal authentication module and checking the user authentication information of the received photographed image data (Step 713), it is saved at the temporary storage DB (Step 714).

[0075]From the photographed image data saved at the temporary storage DB, a personal authentication module reads additional information (photographing date etc.), and saves it user's information DB210 (Step 715).

[0076]Next, the personal authentication system 207 carries out processing treatment of the photographed image data to the graphics file 209 using an image-processing module (Step 716), and saves the graphics file 209 at the image storage section 208 (Step 717).

[0077]When there is the next photography, when there is next no photography, connection with the server 200 is repeatedly ended from Step 705. the time when communication of data is not performed as for the connection with the server 200 -- predetermined time (for example, about 3 minutes) progress -- if it carries out, it may be made to be automatically cut from the server 200 side

[0078]The user (a photography person or those who can be perused) can peruse the picture saved at the image processing server. Drawing 8 shows an example of processing in the case of perusing the picture saved at the image processing server with a flow chart.

[0079]First, it connects with the image processing server 200 via the network 99 (drawing 1) (Step 801), and user authentication information is transmitted (Step 802).

[0080]And the personal authentication system 207 of the image processing server 200 receives user authentication information (Step 803), and operates a personal authentication module. A personal authentication module compares the user authentication information currently recorded on user's information DB210 with the received user authentication information, and checks a user (Step 804).

[0081]Next, the personal authentication system 207 operates a picture inspection module, reads the menu data saved at the picture inspection DB, and forms a menu page (Step 805). The formed menu page is transmitted to the reading terminal device 101 (Step 806).

[0082]The reading terminal device 101 receives a menu page, and displays it with output units, such as a display (Step 807). With reference to a menu page, a user inputs the information on a required picture (for example, photographing date), and transmits to the image processing server 200 (Step 808).

[0083]If the information on a required picture is received (Step 809), a personal authentication module will be used for the image processing server 200 based on this, and it will search user's information DB210 (Step 810). And the searched result is displayed on a search-results page (Step 811), and it transmits to the reading terminal device 101 (Step 812). A picture inspection module is used for a search-results page, it reads the retrieval page data saved at the picture inspection DB, and forms a search-results page.

[0084]The reading terminal device 101 receives a search-results page, and displays it with output units, such as a display (Step 813). A user chooses a graphics file to peruse from search results with reference to a search-results page. Thereby, the reading terminal device 101 transmits the information on the purport that he would like to peruse a picture, and a picture to peruse to the image processing server 200 (Step 814).

[0085]If the information on the purport that he would like to peruse a picture, and a picture to peruse is received (Step 815), a personal authentication module and an image-processing module will be used for the image processing server 200 based on this, and it will read an image storage section to the graphics file 209 for the information at the time of photography from user's information DB210. These are displayed on an inspection page (Step 816), and it transmits to the reading terminal device 101 (Step 817). A picture inspection module is used for an inspection page, it reads the inspection page data saved at the picture inspection DB, and forms an inspection page.

[0086]The reading terminal device 101 receives an inspection page, and displays it with output units, such as a display (Step 818). A user peruses a picture by the displayed inspection page (Step 819).

[0087]When a user peruses a picture, it is operated referring to the page (Web page) displayed on the display of

the reading terminal device 101. Hereafter, with reference to the example of the page displayed on a display, the example of operation of the user in each page is explained. A mouse and a keyboard shall perform operation.

[0088] Drawing 9 is a figure showing an example of the menu page displayed on a display, when a user peruses a picture. When a user peruses a picture, a menu page is referred to first. In a menu page, a picture can be seen for search, the operation information of a system, etc. A picture is searched with this page when a user wants to peruse a picture.

[0089] When a user searches a picture, a retrieval object is inputted first. If a retrieval object is made into the information at the time of photography, such as a photographing date and a photographing location, it will tend to perform search. Here, suppose that a retrieval object is searched as a photographing date and a photographing location.

[0090] A user doubles cursor with the input columns 902, 903, and 904 of a photographing date, and inputs a year, the month, and a day. inputting -- a year -- good -- carrying out -- a day -- it is good. And cursor is doubled with the input columns 905 and 906 of a photographing location, and a country and the name of a place are inputted. Tokyo may be sufficient as the name of a place, for example, and only Nagatacho is. inputting -- a country -- good -- carrying out -- the name of a place -- it is good.

[0091] If the input of a retrieval object is completed, a mouse cursor will be doubled and clicked to the search start button 901 with which the page was equipped. Search of a picture begins now.

[0092] Drawing 10 is a figure showing an example of the search-results page displayed on a display, when a user peruses a picture. When a user searches a picture, the result of search is expressed as a search-results page. In a search-results page, reference of the information at the time of photography of a picture, selection operation of a picture to peruse, and download of a picture can be performed.

[0093] The retrieval object 1001 used for search is displayed on the search-results page. And the picture preview 1002 of the picture applicable to a retrieval object and the comment 1003 of a picture are displayed on the result of search.

[0094] If a user has a picture perused with reference to the result of search on a search-results page, he will double and click a mouse cursor to the picture preview 1002. The picture selected now can be perused.

[0095] Speech information can be heard if a mouse cursor is doubled and clicked on the speech information button 1004 with which the page was equipped to hear speech information. A picture is downloadable if a mouse cursor is doubled and clicked to the download button 1005 with which the page was equipped to download.

[0096] If a user doubles and clicks a mouse cursor to the picture preview 1002, an inspection page will be displayed on a display. A user peruses a picture on this inspection page.

[0097] Drawing 11 is a figure showing an example of the inspection page displayed on a display, when a user peruses a picture. The picture which a user peruses is displayed on an inspection page. In an inspection page, all the information at the time of photography of a picture and a picture can refer to it, and editing operation of a picture and download of a picture can be performed to others.

[0098] The picture 1101 which a user peruses is displayed on the inspection page. And the photographing date 1102 of the picture, the map 1103 of a photographing location, and the comment 1105 of the geographic information 1104 and a picture are displayed. The picture inspection module of the personal authentication system 207 reads map data from the map DB saved in the map around a photographing location from the position data of the picture at the memory storage 206 (drawing 3), and the map 1103 of a photographing location creates a map, and shows a photographing location on the map.

[0099] The map 1103 of a photographing location is clicking the enlarging buttons 1106 with which the page was equipped, and the reduction button 1107, is expanded and can carry out the reduced display of the map. Thereby, since a photographing location can be known more correctly, a user's convenience is high to take a photograph at the place same for example again.

[0100] When a user wants to edit a picture, it is clicking the edit button 1108 with which the page was equipped, and the trimming of a picture, light and darkness and color correction, text input, etc. can be edited, for example. In this embodiment, although a picture inspection module performs edit of a picture, it is good to have an edit module for editing a picture independently actually.

[0101] The comment 1105 of a picture can be edited if this comment is clicked. Speech information can be heard if the speech information button 1109 with which the page was equipped is clicked to hear speech information. Edit of speech information is also possible here.

[0102] It is downloadable if a mouse cursor is doubled and clicked to the download button 1110 with which the page was equipped to download a picture. When the server 200 receives a picture, download can also be set as the specified reading terminal device 101 so that it may be made automatic.

[0103] An inspection page can also be customized by the user. Thereby, the user can create an inspection page in accordance with a page use or user-friendliness.

[0104] Although an above embodiment is processing from photography of an image processing system to the inspection of a picture, this is an example and is not restricted to this as stated also in advance.

[0105] Here, he goes to the place which a user wants to photo, and suppose that a photograph was taken with

the photographing terminal 100. The example which compared the case where a user used the camera A which is the photographing terminal 100 of this invention at this time with the case where the conventional camera B is used is explained. When there is no distinction of the camera A or the camera B below, it is only called a camera.

[0106] Drawing 12 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. With reference to drawing 12, the example which compared the case where the camera A of this invention was used with the case where the conventional camera B is used is explained in the procedure to storage of the picture acquired from the photography which a user performs by photoing. A user photos the candidate for photography using the camera A or the camera B first, and gets image data.

[0107] In the conventional camera B, after taking a photograph using the camera B and the user returned to a house, a company, etc., from the archive medium where the camera B or image data was saved in the image data obtained by photography, he pulled out image data and was arranging using the personal computer etc. And the arranged image data was sticking and keeping the label etc. to the archive medium itself where image data was saved. For this reason, image data distributed to two or more memory media in many cases arrangement of image data not only takes time and effort, but, and efficient storage and management were difficult for the user.

[0108] On the other hand, in the camera A of this invention, it is automatically transmitted to a server at the same time it took a photograph, and the image data which the user photoed and got with the camera A is saved at a server. Time and effort stops thereby, arrangement of image data taking for a user. Since image data bundles up and is kept by the server, efficient storage is attained. And since the information at the time of photography is also added and transmitted to image data when transmitting image data to a server, management of image data can also be performed efficiently.

[0109] Since image data is saved immediately after taking a photograph at a server when the camera A is used, even if the camera A should be broken or damaged, there is no fear of image data being lost.

[0110] Drawing 13 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. The case where a user buys a new camera is explained with reference to drawing 13.

[0111] In many cases, camera B' replaced with the camera B differed [former] in the format of a memory medium or image data. For this reason, since the image data photoed and obtained by camera B' cannot be saved at the database software which was being used until now, it will be saved at another database software. When a personal computer etc. pull out the image data of camera B', a required equipped device must also be prepared independently. Therefore, even if a user will manage two or more memory media and database software and changes to more highly efficient new camera B', he will have forced inconvenience after all.

[0112] Since the image data photoed and obtained is saved in the same format at the server 200, it becomes unnecessary on the other hand, to care about the memory medium of a camera, or the difference in the format of image data in the camera A of this invention, even if it bought the new camera A with camera A'. Since the communication apparatus 110 has memorized personal authentication information etc. when the cellular phone which has a function like an I mode (trademark) in the communication apparatus 110 (drawing 2) is being used, this is only connected to camera A' and the user can take a photograph as before. Thereby, since the user can use camera A' like former, he can buy a new camera in comfort.

[0113] If it has the above communication apparatus 110 even when a user borrowed and photos the camera A from this, it is connecting this to the camera A, and the image data obtained by photography can be transmitted and saved at the server 200. That is, even if it will not bring a camera when a user goes out, and going to travel, for example if it has the sending set 110, the usage which borrows a camera by the rental service of a spot, etc. and which takes a photograph becomes easy.

[0114] Drawing 14 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. When a user is a journalist of a publishing company and it uses a camera for coverage of an event with reference to drawing 14, the example which compared the case where the camera A of this invention was used with the case where the conventional camera B is used, in the procedure from the photography which a user performs to creation of the report of an event is explained.

[0115] Here, the journalist who is standing by the journalist who covers at the spot where an event is performed to the journalist X and the publishing company is explained as the journalist Y. Both the journalist X and the journalist Y are users, and especially the journalist Y is a person who stated previously and who can be perused. First, the journalist X photos the candidate for coverage using the camera A or the camera B, and gets image data.

[0116] In the conventional camera B, the journalist X takes a photograph with the camera B in the candidate for coverage of an event. Then, after coverage of an event is completed and returning to the lodging of a spot, etc., from the archive medium where the camera B or image data was saved in the image data obtained by photography, image data is pulled out and it arranges using a personal computer etc. And the manuscript which a

publishing company sends based on the arranged image data and the information which covered is drawn up. [0117]Next, the journalist X attaches the image data arranged in the drawn-up manuscript, and sends to a publishing company using E-mail etc. The journalist Y who received this performs editing work based on the manuscript and image data which were received, and creates a report.

[0118]On the other hand, in the camera A of this invention, it is automatically transmitted to a server at the same time it took a photograph, and the image data which the journalist X photoed and got with the camera A is saved at a server. The journalist Y who can come, simultaneously is standing by by the publishing company downloads from a server with reference to the image data saved at the server. That is, the journalist Y can download the image data which the journalist X photoed and got in real time. Speech information at the time of photography is attached to image data. The journalist Y creates a report based on the speech information at the time of the downloaded image data and photography, etc.

[0119]Thereby, the journalist Y can create a report using the image data, the moment the journalist X took a photograph by coverage. For this reason, the time taken to create a report from coverage can be shortened substantially, and it comes to be able to perform quick deployment which is not until now. Local coverage, a scoop, etc. can harness especially this effect by the coverage by which a speed demand is carried out.

[0120]If a photograph is taken with the above photographing terminal 100, the picture can be used all over the world immediately after taking a photograph.

[0121]Although an above embodiment explained by the case where image data is a still picture, it is available also to an animation.

[0122]

[Effect of the Invention]The photographing part 114 which photos the candidate for photography and generates image data according to the photographing terminal 100 of this invention as mentioned above, The sending set 110 which transmits image data to real time at a remote server. Since it has the additional information generating devices 111 and 115 which generate the attached data about additional information besides image data and attached data is transmitted to a remote server with image data, If it not only becomes unnecessary to record additional information independently at the time of photography, but is a place connectable with a remote server, a photograph can be taken to infinity as a matter of fact.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]Especially this invention relates to the photographing terminal, the image processing server, photographing method, and image processing method which can transmit the image data obtained by photography to a remote server about a photographing terminal, an image processing server, a photographing method, and an image processing method.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]There was a digital camera which photos the candidate for photography and generates image data from the former. Instead of the film used for a film photo, the photoed picture is generated as digital data and this saves it at memory storage.

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Invention] The photographing part 114 which photos the candidate for photography and generates image data according to the photographing terminal 100 of this invention as mentioned above, The sending set 110 which transmits image data to real time at a remote server, Since it has the additional information generating devices 111 and 115 which generate the attached data about additional information besides image data and attached data is transmitted to a remote server with image data, If it not only becomes unnecessary to record additional information independently at the time of photography, but is a place connectable with a remote server, a photograph can be taken to infinity as a matter of fact.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] According to the above conventional digital cameras, a photograph was able to be taken only within the storage capacity of the memory storage which it had. Information acquirable at the time of photography is only the digital data of a picture, and all the information (for example, filming site) that should accompany a photograph had to be recorded by an another device and technique (for example, note).

[0004] Since image data is dependent on the memory storage with which the digital camera was equipped, it cannot perform efficient management. When arrangement of the image data or information which were photoed did not have people by its hand, it did not become.

[0005] Then, photography of this invention is possible for infinity as a matter of fact, without being dependent on the memory storage with which the camera was equipped, and it aims to let the additional information at the time of photography provide the photographing terminal, the image processing server, photographing method, and image processing method which are recorded simultaneously with photography.

[Translation done.]

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MEANS

[Means for Solving the Problem] To achieve the above objects, the photographing terminal 100 by this invention, For example, as shown in drawing 2, A candidate for photography is photoed. Image data. The photographing part 114 to generate; said generated image data. the sending set 110 which transmits to real time at a remote server, and; -- having the additional information generating devices 111 and 115 which generate attached data about additional information besides said generated image data --; -- it constitutes so that said attached data may be transmitted to said remote server with said image data.

[0007] The photographing terminal 100 is the device which included a function like an I mode (trademark) cellular phone in a digital camera typically.

[0008] The photographing part 114 which will photo a candidate for photography and will generate image data if constituted in this way, The sending set 110 which transmits image data to real time at a remote server, Since it has the additional information generating devices 111 and 115 which generate attached data about additional information besides image data and attached data is transmitted to a remote server with image data, If it not only becomes unnecessary to record additional information independently at the time of photography, but is a place connectable with a remote server, a photograph can be taken to infinity as a matter of fact.

[0009] Additional information is geographic information of a point currently photoed, for example, and attached data is filming site point specific data which pinpoints the point. It may be description of a picture and a sound of a filming site with a sound which let a microphone as explanation to a still photograph etc. pass, and input data and exposure time from a keyboard may be sufficient.

[0010] The image storage section 117 which saves said generated image data in the above-mentioned photographing terminal 100; Inside of a saved area of said image storage section 117, It may be made to have the controller 113 controlled to be able to save new image data with said sending set 110 in a saved area transmitted to a remote server.

[0011] Since it will have the controller 113 controlled to be able to save new image data with the sending set 110 in a saved area transmitted to a remote server among a saved area of the image storage section 117 and the image storage section 117 if constituted in this way, Photography can be continued, when not connectable with a remote server, or even when transmission speed of the sending set 110 is slower than photography speed. Since new image data can be saved in a saved area transmitted to a remote server of the image storage section 117, a saved area of the image storage section 117 can be used efficiently.

[0012] Another photographing terminal 100 by this invention, For example, the image storage section 117 which saves image data by which the; aforementioned generation was carried out with the photographing instrument 114 which photos a candidate for photography and generates image data as shown in drawing 2; said saved image data, The outputting part 119 outputted to the sending set 110 which transmits to a remote server; Inside of a saved area of said image storage section 117, To a saved area transmitted to a remote server, with said sending set 110. the controller 113 controlled to be able to save new image data and; -- having the additional information generating devices 111 and 115 which generate attached data about additional information besides said generated image data --; -- it constitutes so that said attached data may be transmitted to said remote server with said image data.

[0013] Since it will have the outputting part 119 outputted to the sending set 110 which transmits saved image data to a remote server if constituted in this way, image data can be transmitted to a remote server.

[0014] The above photographing terminal 100 is good to have the input part 119 which inputs image data from a remote server.

[0015] And the above photographing terminal 100 may be provided with the buffer store part 122 between said image storage section 117 and said controller 113.

[0016] In the above photographing terminal 100, although a picture of image data is a still picture typically, it may be an animation.

[0017] In order to attain said purpose, the image processing server 200 by this invention, For example, as shown in drawing 3, Image data transmitted from the remote photographing terminal 100. The receive section 205 which receives; it has the image data storage section 208 which makes it correspond to user's information in the user's

information database 210 which saves user's information concerning a user of said photographing terminal 100, and said user database 210, and saves said image data which received.

[0018] The receive section 205 which will receive image data transmitted from the remote photographing terminal 100 if constituted in this way, Since it has the user's information database 210 which saves user's information concerning a user of a photographing terminal, and the image data storage section 208 which saves image data which made it correspond to user's information in the user database 210, and received, User's information and image data which received from the photographing terminal 100 can be made to be able to respond, and it can save efficiently at memory storage.

[0019] The described image processing server 200 is good to have the processing section 203 which processes image data saved at said image data storage section 208. Thereby, a server manager can respond for a user to ask and image data can be processed by the server side. When saving image data with processing at an image data storage section, for example, It says changing into a format for an output, when changing image data into a format for preservation, or responding for a user to ask and outputting image data, and also editing image data, such as trimming of image data, and text input.

[0020] The above image processing server 200 is good to have the outputting part 205 which a user responds in quest of said saved image data, and is outputted. Thereby, the user can pull out image data easily. Download performs a cash drawer of image data in a personal computer etc. typically.

[0021] In the above image processing server 200, although a picture of image data is a still picture typically, it may be an animation.

[0022] In order to attain said purpose, a photographing method by this invention, For example, as shown in drawing 7, The additional information generation process 708 of generating attached data about additional information besides image data by which the; aforementioned generation was carried out with the picture preservation process 712 of saving image data by which the; aforementioned generation was carried out with the photographing process 705 which photos a candidate for photography and generates image data; said saved image data, Difference of image data by which equips real time with the transmission process 710 which transmits to the remote server 200, and the; aforementioned generation is carried out with said attached data, and said image data transmitted is accumulated.

[0023] The additional information generation process 708 of generating attached data about additional information besides image data if constituted in this way, Since it has the transmission process 710 which transmits saved image data to the remote server 200 with attached data in real time, it becomes unnecessary to record additional information independently at the time of photography, and a user can be concentrated on photography.

[0024] Since it has the transmission process 710 which transmits image data to the remote server 200 in real time and difference of image data generated and image data transmitted is accumulated, By transmitting image data to the remote server 200 in real time, image data to save can be stopped to the minimum, and memory storage can be used efficiently. For this reason, the number of photography which can be photoed can be made into infinity as a matter of fact. When image data is a video data, photography can be continued even if transmission speed is slower than photography speed.

[0025] Difference of image data generated and image data transmitted being accumulated is that difference of speed (suitably henceforth generation speed) by which a picture is generated, and speed (suitably henceforth transmitting speed) to which a picture is transmitted is accumulated. That is, if transmitting speed has always exceeded generation speed, image data will not be accumulated in the image storage section 117. It says that quantity of image data before transmission saved at the image storage section 117 increases accumulation.

[0026] In order to attain said purpose, an image processing method by this invention, For example, as shown in drawing 7, Image data transmitted from the remote photographing terminal 100. The receiving process 713 to receive and the user's information preservation process 715 of saving user's information concerning a user of the; aforementioned photographing terminal 100; it has the image data preservation process 717 of making it corresponding to said saved user's information, and saving said image data which received.

[0027] The work process 816 into which a described image disposal method processes said saved image data as shown, for example in drawing 8; it is good for a user to respond in quest of said processed image data, and to have the output process 817 to output.

[0028]

[Embodiment of the Invention] Hereafter, an embodiment of the invention is described with reference to drawings. Identical codes or similar numerals are given to the member which is mutually the same or corresponds in each figure, and the duplicate explanation is omitted.

[0029] Drawing 1 is a schematic block diagram of the taken image processing system (suitably henceforth an image processing system) which are a photographing terminal which is an embodiment by this invention, and an operations system constituted including an image processing server. Each user (it may be called a photography person or those who can be perused) who is going to use an image processing system operates the photographing terminals 100/1, 100/2, 100/3 or the reading terminal devices 101/1, 101/2, and 101/3. Hereafter,

when need to distinguish each photographing terminal and it is not necessary to explain it, it is only called the photographing terminal 100, and when need to distinguish each reading terminal device and it is not necessary to explain it, it is only called the reading terminal device 101. The photographing terminal 100 and the reading terminal device 101 are connected to the image processing system with which the server 200 side was equipped via the network 99.

[0030]Typically, although the photographing terminal 100 is the device which included a function like an I mode (trademark) cellular phone in the digital camera, here, It may be the device which carried out the small weight saving by having only a function which eliminates a communication terminal for exclusive use, for example, the talking function of a cellular phone, etc., is image-data-transmitted or is received instead of a cellular phone. It may be made for the photographing terminal 100 to function also as the reading terminal device 101.

[0031]Although the reading terminal device 101 is a computer typically, it contains widely the cellular phone incorporating IC (an integrated circuit and LSI are also included) besides a personal computer, Web TV incorporating IC, and the information home appliance incorporating IC. That is, the reading terminal device 101 has the available Internet in the available existing general aviation.

[0032]The photography person who is a user photos the candidate for photography using this photographing terminal 100. The picture generated by photography will be transmitted to the server 200 installed outside, if it sees from the photographing terminal 100. Two or more photographing terminals 100 exist only the number of photography persons that is, at least. The network (it may only be called a network below) 99 can take not only computer networks, such as the Internet and a telephone line, but various gestalten, such as a TV radio wave, satellite internet, a cable line, and TV crevice electric wave. An image processing system is mounted on various computers, such as a personal computer as the server 200, a workstation, a mainframe, and it deals in it.

[0033]It may be directly connected through the circuit which constitutes the network 99, and the photographing terminal 100 and the reading terminal device 101, and the server 200 may be connected via the provider on a network. A provider may be plural. It may be directly connected by radio.

[0034]Drawing 2 is a block diagram showing the example of composition of the photographing terminal 100 which each user uses.

[0035]Using the operation input section 111 with which the photographing terminal 100 was equipped, operating instructions are emitted to the photographing terminal 100, or a user inputs the information at the time of photography, etc. The operation input sections 111 are a key, a microphone (when inputting a sound), a remote control, a touch screen, etc., for example.

[0036]In order to display the screen of an image processing system, the state of input and a device, etc., the information output part 112 with which the photographing terminal 100 was equipped is used. The information output part 112 is the display and printer of a liquid crystal display etc., for example. Although the operation input section 111 and the information output part 112 are illustrated as what is contained in the photographing terminal 100 at one, they may be a different body. It is connected to the control section 113 with which the photographing terminal 100 was equipped, and the operation input section 111 and the information output part 112 are controlled by the control section 113.

[0037]The photographing terminal 100 is provided with the photographing part 114 which takes a photograph and generates image data. It is connected to the control section 113 and the photographing part 114 is controlled by the control section 113. When a user photos the candidate for photography, the photographing part 114 is operated using the operation input section 111, and a photograph is taken. Image data is saved in transmission or the taken image database 118 (suitably henceforth DB) via the control section 113 to the server 200.

[0038]The photographing terminal 100 is provided with the GPS antenna 115 for receiving the position data of a photographing location. It is connected to the control section 113 and the GPS antenna 115 can receive the signal 102a from the artificial satellite 102. The control section 113 computes position data based on the signal 102a received from the GPS antenna 115, connects the computed position data (for example, latitude O*x**, longitude *****) with image data, and records it on transmission or taken image DB118. This position data is good for navigation systems, such as the existing car-navigation system, to make transmission possible. Since a navigation system can be used when other users go to the same photographing location by this, it can go to the photographing location easily.

[0039]The temporal data outputted from the information at the time of the photography inputted from the operation input section 111 at this time (for example, sound) and the clock part 116 connected to the control section 113 is also connected with image data, and is recorded on transmission or taken image DB118. What was given to image data by using such additional information as attached data is called photographed image data. The record to taken image DB118 of attached data is good to be made to carry out simultaneously with record of image data.

[0040]The communication interface 119 is connected to the control section 113, photographed image data is transmitted to the communication apparatus 110, or an image data file, information, a program module, etc. are received from the server 200. Furthermore the communication apparatus 110 is connected to the communication interface 119, and the data transmitted and received from the communication interface 119 is transmitted and

received to the server 200. The communication apparatus 110 is a cellular phone with a function typically like an I mode (trademark). When the communication apparatus 110 is equipped with the input/output device (for example, operation input device) etc., it is good to enable it to operate the photographing terminal 100 even from the communication apparatus 110.

[0041]The image storage section 117 is connected to the control section 113, and taken image DB118 etc. which records the image data etc. which were not transmitted to the server 200 is saved at the image storage section 117 at it. The image data file, program module and use information which were downloaded from the server 200, the operation information on the photographing terminal 100, etc. can be saved at the image storage section 117. The image storage section 117 is an attachment-and-detachment type, and may be made exchangeable. Even when it is not ability ready for sending and image data is photoed to the storage capacity of the image storage section 117 to the server 200 by doing in this way, for example, photography becomes possible further by exchanging for another image storage section 117.

[0042]Between the control section 113 and the image storage section 117, it has the buffer store part 122. Since photography becomes possible by saving photographed image data in the buffer store part 122 also in the time of exchange of the above-mentioned image storage section 117 thereby, for example, a user does not miss the opportunity of photography of the incident which arises suddenly. When again equipped with the image storage section 117, the buffer store part 122 moves the saved photographed image data to the image storage section 117, and is controlled by the control section 113 to secure the capacity which can be saved as much as possible.

[0043]The image storage section 117 is controlled by the control section 113 to be able to save the photographed image data generated by new photography in the saved area of the photographed image data transmitted to the server 200 of taken image DB118.

[0044]The data input part 120 and the data output part 121 are connected to the control section 113. These data input/output parts 120 and 121 connect with computers, such as other photographing terminals 100 and a personal computer, a digital camera, etc., transmit and receive photographed image data etc. directly, or connect another communication devices (for example, modem etc.), and transmit and receive photographed image data etc. Input devices, such as a keyboard, can be connected to the data input part 120, and output units, such as a display and a printer, can be connected to the data output part 121.

[0045]Drawing 3 is a block diagram showing the example of composition of the image processing server 200 (suitably henceforth the server 200) connected with the photographing terminal 100 via the network 99. With this image processing server 200, the personal authentication system 207 which is an image processing system by the side of a server operates.

[0046]This system is mounted in the image processing server 200. This system can be mounted by various computers, such as a personal computer, a workstation, and a mainframe. The image processing server 200 is equipped with the control section 203 which controls an image processing system. The output unit 202 which outputs the result processed with the input device 201 which inputs the information for operating the image processing server 200, and the image processing server 200 is connected to the image processing server 200. The input/output devices 201 and 202 are connected with the I/O interface 204 to the control section 203. The I/O interface 204 controls the input devices (keyboard etc.) 201 and the output units (display etc.) 202.

[0047]The communication interface 205 is connected to the control section 203, and photographed image data is further received via the network 99 from the photographing terminal 100 which each user uses. Various information about an image data file or an image processing system is transmitted and received to the photographing terminal 100 and the reading terminal device 101 which each user uses.

[0048]The control section 203 is provided with the personal authentication system control section 207 (suitably henceforth a personal authentication system) which is an image processing system mounted in the image processing server 200 which a user uses. The personal authentication system control section 207 is accessed by the user via the network 99, and can download only a required portion now to a user's device if needed. The personal authentication system part 207 is used, when a user transmits photographed image data or the transmitted picture is perused.

[0049]According to this embodiment, in this system, the personal authentication module, the image-processing module, and the picture inspection module are contained. These modules are not limited to the module which chose the required thing suitably, and should just constitute the system, and was mentioned here.

[0050]The memory storage 206 which memorizes information required for an image processing system and data is connected to the control section 203. According to this embodiment, the memory storage 206 contains the image storage section 208, the user's information database 210, the temporary storage database, the picture inspection database, and the map data base. Neither the database saved at the memory storage 206 nor a file is limited to the thing quoted here. At the image storage section 208, the graphics file 209 which carried out the optimal processing for saving the photographed image data etc. which were received at the memory storage 206 is saved.

[0051]Although they were explained by this embodiment having saved the image storage section 208 and user's

information DB210 at the memory storage 206 of the image processing server 200. As for the device 208 of a different body, for example, an image storage section, user's information DB210 is good also as a user's information server as a picture file server respectively.

[0052] Drawing 4 and drawing 5 are the block diagrams showing the outline of an example of the function of the personal authentication system 207. With reference to drawing 4, the case where a user transmits photographed image data to the image processing server 200 is explained.

[0053] The photography person who is a user transmits the photographed image data produced by photoing the candidate for photography to the personal authentication system 207 in the image processing server 200 with the photographing terminal 100 (drawing 2) (401). The photographed image data which a photography person's personal authentication information registered beforehand transmits at this time is made to correspond, and it is recorded.

[0054] The personal authentication system 207 which received the photography person's photographed image data saves photographed image data first at the temporary storage DB (402). Next, the personal authentication information on the saved photographed image data is checked, and this photography person's personal authentication information is read from user's information DB210 (403). If it judges that the personal authentication information received from the read personal authentication information is right, a part or all of information at the time of photography is read from photographed image data (404), and it saves user's information DB210 (405). Photographed image data carries out processing treatment to the optimal graphics file 209 for saving at the image storage section 208 (drawing 3), and saves it at the image storage section 208 (406). The preserved information of this graphics file 209 is also saved user's information DB210. The optimal graphics file for here saving is deleting it, after saving attached data, such as information at the time of photography, user's information DB210, and considering it only as image data for example. It may be made to make small the file size to save by changing into the state where image data was furthermore compressed.

[0055] Next, the case where the photography person or those who can be perused who is users peruses the picture saved at the image processing server 200 with reference to drawing 5 is explained. Those who can be perused refer to those who were allowed to peruse the image data which the photography person saves at the image processing server 200. The photography person can register those who can be perused for each [which has saved self at the image processing server 200] image data of every.

[0056] A user uses the reading terminal device 101 or the photographing terminal 100, transmits personal authentication information, and logs in to the personal authentication system 207 of the image processing server 200 (501). If a user logs in to the personal authentication system 207, he will demand image data to peruse etc. of the personal authentication system 207.

[0057] From the received personal authentication information, the personal authentication system 207 reads information required in order to meet the demand of users, such as a list of the image data saved from user's information DB210 at the image storage section 208 (502), and saves it at the temporary storage DB (503). And by reading stored information to the temporary storage DB, (504) and the required graphics file 209 are read (505), and it saves at the temporary storage DB (503).

[0058] Next, the personal authentication system 207 reads information required to form a page for a user to peruse a picture from the picture inspection DB (506). An inspection page is formed from this, and the information and the graphics file 209 which are saved at the temporary storage DB. The user can peruse the picture saved from this inspection page at the image processing server 200. An inspection page is a homepage (for example, page formed by an HTML file) typically.

[0059] When a user peruses a picture and edit is added to a picture, the edited information is saved user's information DB210 (507), and the edited graphics file 209 is saved at the image storage section 208 (508). Registration of those who can be perused can be performed also here.

[0060] When a user downloads the graphics file 209, the personal authentication system 207 carries out change processing of the graphics file 209 to the format which a user demands, and downloads it to the reading terminal device 101 or the photographing terminal 100 (509).

[0061] The output of a picture is good to enable it for the output unit 202 (drawing 3) with which the image processing server 200 was equipped to also perform. For example, let the output unit 202 be a printing machine (for example, color copier) more expensive than a general aviation and highly efficient. And ordinary persons can also be provided now with a more nearly quality printing picture by outputting a picture using this printing machine.

[0062] When a user uses an image processing system, it is necessary to register with the personal authentication system 207 of the image processing server 200 first. Drawing 6 shows an example of processing in case a user registers with the personal authentication system 207 with a flow chart. The personal authentication module in the personal authentication system 207 performs processing of registration.

[0063] First, a user uses the photographing terminal 100 and connects with the image processing server 200 via the network 99 (drawing 1) (Step 601).

[0064] Next, a user transmits a user's own information, including a name, an address, a telephone number, a mail

address, etc., the information on the photographing terminal 100 which the user is using, etc. to an input and the image processing server 200 (Step 602).

[0065]If the transmitted user's information is received (Step 603), a personal authentication module will be used for the personal authentication system 207 of the image processing server 200, and it will publish a user ID and a password (Step 604). And the user's information, user ID, and password which were received are registered into user's information DB210 (Step 605). A user ID and a password are transmitted to the photographing terminal 100 (Step 606).

[0066]The photographing terminal 100 receives the user ID and password which have been transmitted (Step 607). If you register into this storage device the user ID and password which were received at this time when the image storage section 117 or the communication apparatus 110 is provided with the storage device, whenever it connects with the personal authentication system 207, it becomes unnecessary to enter a user ID and a password, and is convenient.

[0067]Above, the registration to the personal authentication system 207 is completed (Step 608).

[0068]The user who completed registration to the personal information system of the image processing server 200 can use an image processing system. A user transmits the image data which photoed the candidate for photography and was generated to an image processing server, and drawing 7 shows an example of processing in the case of saving with a flow chart.

[0069]First, a photography person operates the photographing terminal 100, connects with the image processing server 200 via the network 99 (drawing 1) (Step 701), and transmits user authentication information (Step 702). Here, the communication between the photographing terminal 100 and the image processing server 200 is good to consider it as the packet communication currently used for the latest cellular phone etc. Since a telex rate is charged by this only at the data volume which communicated even if it is maintaining connection, the photography person can do photography, maintaining connection with the server 200 in comfort.

[0070]And the personal authentication system 207 of the image processing server 200 receives user authentication information (Step 703), and operates a personal authentication module. A personal authentication module compares the user authentication information currently recorded on user's information DB210 with the received user authentication information, checks a user, and maintains connection (Step 704). When operating the photographing terminal 100, or when photography is carried out, the above connecting operation can be set up so that the photographing terminal 100 may carry out automatically. If this setting out is carried out, a photography person can be concentrated on photography like the conventional camera, without being conscious of connection with the server 200.

[0071]Next, the candidate for photography is photoed (Step 705). At this time, a photography person inputs photographing instruction from the operation input section 111 (a shutter button is pushed). It operates and the shutter by which the photographing part 114 was equipped with the control section 113 with the inputted photographing instruction is photoed.

[0072]The image data obtained by photography is saved in the buffer store part 122 via the control section 113. (Step 706). At this time, the control section 113 inputs the signal 102a which the GPS antenna 115 received, and computes the position data of a photographing location from this signal 102a (Step 707). And attached data is generated from the computed position data and the temporal data inputted from the clock part 116, and it relates with the saved image data, and saves in the buffer store part 122 as photographed image data (Step 708). Temporal data is the time of the photographing location where time difference was amended with the computed position data. The information at the time of the photography which a photography person inputs is recorded on attached data, when a photography person inputs information (for example, sound).

[0073]Next, as for the control section 113, photographed image data judges whether it is ability ready for sending to the image processing server 200 (Step 709). In the case of ability ready for sending, the (step 709 transmits photographed image data to Y) and the image processing server 200 (Step 710), and it goes into the next photography (Step 711). When it cannot transmit, the (step 709 saves N) and photographed image data taken image DB118 of the image storage section 117 (Step 712), and goes into the next photography (Step 711). The photographed image data saved taken image DB118 is automatically transmitted, immediately after becoming ability ready for sending except for the case where a photography person forbids transmission.

[0074]If the personal authentication system 207 of the image processing server 200 is received [photographed image data], after using a personal authentication module and checking the user authentication information of the received photographed image data (Step 713), it is saved at the temporary storage DB (Step 714).

[0075]From the photographed image data saved at the temporary storage DB, a personal authentication module reads additional information (photographing date etc.), and saves it user's information DB210 (Step 715).

[0076]Next, the personal authentication system 207 carries out processing treatment of the photographed image data to the graphics file 209 using an image-processing module (Step 716), and saves the graphics file 209 at the image storage section 208 (Step 717).

[0077]When there is the next photography, when there is next no photography, connection with the server 200 is repeatedly ended from Step 705. the time when communication of data is not performed as for the connection

with the server 200 -- predetermined time (for example, about 3 minutes) progress -- if it carries out, it may be made to be automatically cut from the server 200 side

[0078]The user (a photography person or those who can be perused) can peruse the picture saved at the image processing server. Drawing 8 shows an example of processing in the case of perusing the picture saved at the image processing server with a flow chart.

[0079]First, it connects with the image processing server 200 via the network 99 (drawing 1) (Step 801), and user authentication information is transmitted (Step 802).

[0080]And the personal authentication system 207 of the image processing server 200 receives user authentication information (Step 803), and operates a personal authentication module. A personal authentication module compares the user authentication information currently recorded on user's information DB210 with the received user authentication information, and checks a user (Step 804).

[0081]Next, the personal authentication system 207 operates a picture inspection module, reads the menu data saved at the picture inspection DB, and forms a menu page (Step 805). The formed menu page is transmitted to the reading terminal device 101 (Step 806).

[0082]The reading terminal device 101 receives a menu page, and displays it with output units, such as a display (Step 807). With reference to a menu page, a user inputs the information on a required picture (for example, photographing date), and transmits to the image processing server 200 (Step 808).

[0083]If the information on a required picture is received (Step 809), a personal authentication module will be used for the image processing server 200 based on this, and it will search user's information DB210 (Step 810). And the searched result is displayed on a search-results page (Step 811), and it transmits to the reading terminal device 101 (Step 812). A picture inspection module is used for a search-results page, it reads the retrieval page data saved at the picture inspection DB, and forms a search-results page.

[0084]The reading terminal device 101 receives a search-results page, and displays it with output units, such as a display (Step 813). A user chooses a graphics file to peruse from search results with reference to a search-results page. Thereby, the reading terminal device 101 transmits the information on the purport that he would like to peruse a picture, and a picture to peruse to the image processing server 200 (Step 814).

[0085]If the information on the purport that he would like to peruse a picture, and a picture to peruse is received (Step 815), a personal authentication module and an image-processing module will be used for the image processing server 200 based on this, and it will read an image storage section to the graphics file 209 for the information at the time of photography from user's information DB210. These are displayed on an inspection page (Step 816), and it transmits to the reading terminal device 101 (Step 817). A picture inspection module is used for an inspection page, it reads the inspection page data saved at the picture inspection DB, and forms an inspection page.

[0086]The reading terminal device 101 receives an inspection page, and displays it with output units, such as a display (Step 818). A user peruses a picture by the displayed inspection page (Step 819).

[0087]When a user peruses a picture, it is operated referring to the page (Web page) displayed on the display of the reading terminal device 101. Hereafter, with reference to the example of the page displayed on a display, the example of operation of the user in each page is explained. A mouse and a keyboard shall perform operation.

[0088]Drawing 9 is a figure showing an example of the menu page displayed on a display, when a user peruses a picture. When a user peruses a picture, a menu page is referred to first. In a menu page, a picture can be seen for search, the operation information of a system, etc. A picture is searched with this page when a user wants to peruse a picture.

[0089]When a user searches a picture, a retrieval object is inputted first. If a retrieval object is made into the information at the time of photography, such as a photographing date and a photographing location, it will tend to perform search. Here, suppose that a retrieval object is searched as a photographing date and a photographing location.

[0090]A user doubles cursor with the input columns 902, 903, and 904 of a photographing date, and inputs a year, the month, and a day. inputting -- a year -- good -- carrying out -- a day -- it is good. And cursor is doubled with the input columns 905 and 906 of a photographing location, and a country and the name of a place are inputted. Tokyo may be sufficient as the name of a place, for example, and only Nagatacho is. inputting -- a country -- good -- carrying out -- the name of a place -- it is good.

[0091]If the input of a retrieval object is completed, a mouse cursor will be doubled and clicked to the search start button 901 with which the page was equipped. Search of a picture begins now.

[0092]Drawing 10 is a figure showing an example of the search-results page displayed on a display, when a user peruses a picture. When a user searches a picture, the result of search is expressed as a search-results page. In a search-results page, reference of the information at the time of photography of a picture, selection operation of a picture to peruse, and download of a picture can be performed.

[0093]The retrieval object 1001 used for search is displayed on the search-results page. And the picture preview 1002 of the picture applicable to a retrieval object and the comment 1003 of a picture are displayed on the result of search.

[0094]If a user has a picture perused with reference to the result of search on a search-results page, he will double and click a mouse cursor to the picture preview 1002. The picture selected now can be perused.

[0095]Speech information can be heard if a mouse cursor is doubled and clicked on the speech information button 1004 with which the page was equipped to hear speech information. A picture is downloadable if a mouse cursor is doubled and clicked to the download button 1005 with which the page was equipped to download.

[0096]If a user doubles and clicks a mouse cursor to the picture preview 1002, an inspection page will be displayed on a display. A user peruses a picture on this inspection page.

[0097]Drawing 11 is a figure showing an example of the inspection page displayed on a display, when a user peruses a picture. The picture which a user peruses is displayed on an inspection page. In an inspection page, all the information at the time of photography of a picture and a picture can refer to it, and editing operation of a picture and download of a picture can be performed to others.

[0098]The picture 1101 which a user peruses is displayed on the inspection page. And the photographing date 1102 of the picture, the map 1103 of a photographing location, and the comment 1105 of the geographic information 1104 and a picture are displayed. The picture inspection module of the personal authentication system 207 reads map data from the map DB saved in the map around a photographing location from the position data of the picture at the memory storage 206 (drawing 3), and the map 1103 of a photographing location creates a map, and shows a photographing location on the map.

[0099]The map 1103 of a photographing location is clicking the enlarging buttons 1106 with which the page was equipped, and the reduction button 1107, is expanded and can carry out the reduced display of the map. Thereby, since a photographing location can be known more correctly, a user's convenience is high to take a photograph at the place same for example again.

[0100]When a user wants to edit a picture, it is clicking the edit button 1108 with which the page was equipped, and the trimming of a picture, light and darkness and color correction, text input, etc. can be edited, for example. In this embodiment, although a picture inspection module performs edit of a picture, it is good to have an edit module for editing a picture independently actually.

[0101]The comment 1105 of a picture can be edited if this comment is clicked. Speech information can be heard if the speech information button 1109 with which the page was equipped is clicked to hear speech information. Edit of speech information is also possible here.

[0102]It is downloadable if a mouse cursor is doubled and clicked to the download button 1110 with which the page was equipped to download a picture. When the server 200 receives a picture, download can also be set as the specified reading terminal device 101 so that it may be made automatic.

[0103]An inspection page can also be customized by the user. Thereby, the user can create an inspection page in accordance with a page use or user-friendliness.

[0104]Although an above embodiment is processing from photography of an image processing system to the inspection of a picture, this is an example and is not restricted to this as stated also in advance.

[0105]Here, he goes to the place which a user wants to photo, and suppose that a photograph was taken with the photographing terminal 100. The example which compared the case where a user used the camera A which is the photographing terminal 100 of this invention at this time with the case where the conventional camera B is used is explained. When there is no distinction of the camera A or the camera B below, it is only called a camera.

[0106]Drawing 12 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. With reference to drawing 12, the example which compared the case where the camera A of this invention was used with the case where the conventional camera B is used is explained in the procedure to storage of the picture acquired from the photography which a user performs by photoing. A user photos the candidate for photography using the camera A or the camera B first, and gets image data.

[0107]In the conventional camera B, after taking a photograph using the camera B and the user returned to a house, a company, etc., from the archive medium where the camera B or image data was saved in the image data obtained by photography, he pulled out image data and was arranging using the personal computer etc. And the arranged image data was sticking and keeping the label etc. to the archive medium itself where image data was saved. For this reason, image data distributed to two or more memory media in many cases arrangement of image data not only takes time and effort, but, and efficient storage and management were difficult for the user.

[0108]On the other hand, in the camera A of this invention, it is automatically transmitted to a server at the same time it took a photograph, and the image data which the user photoed and got with the camera A is saved at a server. Time and effort stops thereby, arrangement of image data taking for a user. Since image data bundles up and is kept by the server, efficient storage is attained. And since the information at the time of photography is also added and transmitted to image data when transmitting image data to a server, management of image data can also be performed efficiently.

[0109]Since image data is saved immediately after taking a photograph at a server when the camera A is used, even if the camera A should be broken or damaged, there is no fear of image data being lost.

[0110] Drawing 13 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. The case where a user buys a new camera is explained with reference to drawing 13.

[0111] In many cases, camera B' replaced with the camera B differed [former] in the format of a memory medium or image data. For this reason, since the image data photoed and obtained by camera B' cannot be saved at the database software which was being used until now, it will be saved at another database software. When a personal computer etc. pull out the image data of camera B', a required equipped device must also be prepared independently. Therefore, even if a user will manage two or more memory media and database software and changes to more highly efficient new camera B', he will have forced inconvenience after all.

[0112] Since the image data photoed and obtained is saved in the same format at the server 200, it becomes unnecessary on the other hand, to care about the memory medium of a camera, or the difference in the format of image data in the camera A of this invention, even if it bought the new camera A with camera A'. Since the communication apparatus 110 has memorized personal authentication information etc. when the cellular phone which has a function like an I mode (trademark) in the communication apparatus 110 (drawing 2) is being used, this is only connected to camera A' and the user can take a photograph as before. Thereby, since the user can use camera A' like former, he can buy a new camera in comfort.

[0113] If it has the above communication apparatus 110 even when a user borrowed and photos the camera A from this, it is connecting this to the camera A, and the image data obtained by photography can be transmitted and saved at the server 200. That is, even if it will not bring a camera when a user goes out, and going to travel, for example if it has the sending set 110, the usage which borrows a camera by the rental service of a spot, etc. and which takes a photograph becomes easy.

[0114] Drawing 14 is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used. When a user is a journalist of a publishing company and it uses a camera for coverage of an event with reference to drawing 14, the example which compared the case where the camera A of this invention was used with the case where the conventional camera B is used, in the procedure from the photography which a user performs to creation of the report of an event is explained.

[0115] Here, the journalist who is standing by the journalist who covers at the spot where an event is performed to the journalist X and the publishing company is explained as the journalist Y. Both the journalist X and the journalist Y are users, and especially the journalist Y is a person who stated previously and who can be perused. First, the journalist X photos the candidate for coverage using the camera A or the camera B, and gets image data.

[0116] In the conventional camera B, the journalist X takes a photograph with the camera B in the candidate for coverage of an event. Then, after coverage of an event is completed and returning to the lodging of a spot, etc., from the archive medium where the camera B or image data was saved in the image data obtained by photography, image data is pulled out and it arranges using a personal computer etc. And the manuscript which a publishing company sends based on the arranged image data and the information which covered is drawn up.

[0117] Next, the journalist X attaches the image data arranged in the drawn-up manuscript, and sends to a publishing company using E-mail etc. The journalist Y who received this performs editing work based on the manuscript and image data which were received, and creates a report.

[0118] On the other hand, in the camera A of this invention, it is automatically transmitted to a server at the same time it took a photograph, and the image data which the journalist X photoed and got with the camera A is saved at a server. The journalist Y who can come, simultaneously is standing by by the publishing company downloads from a server with reference to the image data saved at the server. That is, the journalist Y can download the image data which the journalist X photoed and got in real time. Speech information at the time of photography is attached to image data. The journalist Y creates a report based on the speech information at the time of the downloaded image data and photography, etc.

[0119] Thereby, the journalist Y can create a report using the image data, the moment the journalist X took a photograph by coverage. For this reason, the time taken to create a report from coverage can be shortened substantially, and it comes to be able to perform quick deployment which is not until now. Local coverage, a scoop, etc. can harness especially this effect by the coverage by which a speed demand is carried out.

[0120] If a photograph is taken with the above photographing terminal 100, the picture can be used all over the world immediately after taking a photograph.

[0121] Although an above embodiment explained by the case where image data is a still picture, it is available also to an animation.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a block diagram showing the outline of the taken image processing system which is an embodiment of the invention.

[Drawing 2]It is a block diagram showing the example of composition of the photographing terminal which a user uses by an embodiment of the invention.

[Drawing 3]It is a block diagram showing the example of composition of the image processing server used by an embodiment of the invention.

[Drawing 4]It is a block diagram showing the outline of the function of the personal authentication system 207 in case a user transmits photographed image data to an image processing server by an embodiment of the invention.

[Drawing 5]It is a block diagram showing the outline of the function of the personal authentication system 207 in case ***** peruses the picture saved at the image processing server by an embodiment of the invention.

[Drawing 6]It is a flow chart which shows an example of processing in case a user registers with the personal authentication system 207 by an embodiment of the invention.

[Drawing 7]It is a flow chart which shows an example of processing in case a user transmits to an image processing server and saves the image data which photoed the candidate for photography and was generated by an embodiment of the invention.

[Drawing 8]It is a flow chart which shows an example of processing in the case of perusing the picture saved at the image processing server by an embodiment of the invention.

[Drawing 9]When a user peruses a picture by an embodiment of the invention, it is a figure showing an example of the menu page displayed on a display.

[Drawing 10]When a user peruses a picture by an embodiment of the invention, it is a figure showing an example of the search-results page displayed on a display.

[Drawing 11]When a user peruses a picture by an embodiment of the invention, it is a figure showing an example of the inspection page displayed on a display.

[Drawing 12]It is a figure showing the case where the camera A of this invention as an embodiment is used, and the case where the conventional camera B as a comparative example is used, by an embodiment of the invention.

[Drawing 13]It is a figure showing the case where the camera A of this invention as an embodiment when a user buys a new camera is used by an embodiment of the invention, and the case where the conventional camera B as a comparative example is used.

[Drawing 14]It is a figure showing the case where the camera A of this invention as an embodiment when using a camera for coverage of an event is used by an embodiment of the invention, and the case where the conventional camera B as a comparative example is used.

[Description of Notations]

99 Network

100 Photographing terminal

101 Reading terminal device

102 Artificial satellite

110 Communication apparatus

111 Operation input section

112 Information output part

113 Control section

114 Photographing part

115 GPS antenna

116 Clock part

117 Image storage section

118 Taken image database

119 Communication interface

120 Data input part

121 Data output part

122 Buffer store part

200 Image processing server

201 Input device

202 Output unit

203 Control section

204 I/O interface

205 Communication interface

206 Memory storage

207 Personal authentication system

208 Image storage section

209 Graphics file

210 User's information database

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1]A candidate for photography is photoed. A sending set which transmits image data by which the; aforementioned generation was carried out with a photographing part which generates image data to real time at a remote server; Have an additional information generating device which generates attached data about additional information besides said generated image data, and the; aforementioned attached data with said image data. ; photographing terminal constituted so that it might transmit to said remote server.

[Claim 2]An image storage section which saves said generated image data; a photographing terminal given in; claim 1 provided with a controller controlled to be able to save new image data with said sending set among a saved area of said image storage section in a saved area transmitted to a remote server.

[Claim 3]An image storage section which saves image data by which the; aforementioned generation was carried out with a photographing instrument which photos a candidate for photography and generates image data; said saved image data, An outputting part outputted to a sending set which transmits to a remote server; Inside of a saved area of said image storage section, To a saved area transmitted to a remote server, with said sending set. A controller controlled to be able to save new image data; photographing terminal constituted so that it might have an additional information generating device which generates attached data about additional information besides said generated image data and the; aforementioned attached data might be transmitted to said remote server with said image data.

[Claim 4]Image data transmitted from a remote photographing terminal. A user's information database which saves a receive section which receives, and user's information concerning a user of the; aforementioned photographing terminal; image processing server provided with an image data storage section which makes it correspond to user's information in said user database, and saves said image data which received.

[Claim 5]The image processing server according to claim 4 provided with a processing section which processes image data saved at said image data storage section.

[Claim 6]The image processing server according to claim 4 or 5 which a user responds in quest of said saved image data, and is provided with an outputting part to output.

[Claim 7]An additional information generation process of generating attached data about additional information besides image data by which the; aforementioned generation was carried out with a picture preservation process of saving image data by which the; aforementioned generation was carried out with a photographing process which photos a candidate for photography and generates image data; said saved image data, ; photographing method with which difference of image data by which equips real time with a transmission process which transmits to a remote server, and the; aforementioned generation is carried out with said attached data, and said image data transmitted is accumulated.

[Claim 8]A receiving process which receives image data transmitted from a remote photographing terminal, and a user's information preservation process of saving user's information concerning a user of the; aforementioned photographing terminal; image processing method provided with an image data preservation process of making it corresponding to said saved user's information, and saving said image data which received.

[Claim 9]A work process which processes said saved image data; an image processing method given in; claim 8 which a user responds in quest of said processed image data, and is provided with an output process to output.

[Translation done.]

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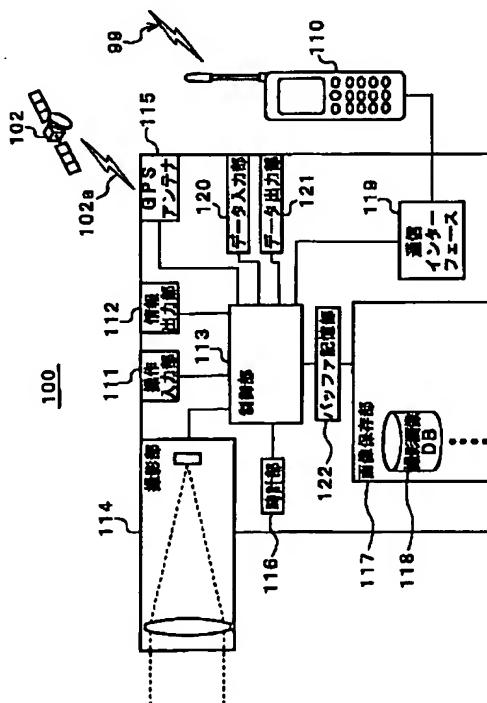
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(54) 【発明の名称】 撮影端末装置、画像処理サーバ、撮影方法及び画像処理方法

(57) 【要約】

【課題】 カメラに備えられた記憶装置に依存することなく事実上無限に撮影ができて、撮影時の付加的情報が撮影と同時に記録される撮影端末装置、画像処理サービス、撮影方法及び画像処理方法を提供する。

【解決手段】 撮影対象を撮影して画像データを生成する撮影部114と；前記生成された画像データをリアルタイムに遠隔のサーバに送信する送信装置110と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成装置111、115とを備え；前記付加データを前記画像データと共に前記遠隔のサーバに送信するように構成される撮影端末装置とする。



【特許請求の範囲】

【請求項1】 撮影対象を撮影して画像データを生成する撮影部と；前記生成された画像データをリアルタイムに遠隔のサーバに送信する送信装置と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成装置とを備え；前記付加データを前記画像データと共に前記遠隔のサーバに送信するように構成された；撮影端末装置。

【請求項2】 前記生成された画像データを保存する画像保存部と；前記画像保存部の保存領域中、前記送信装置で遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるように制御するコントローラとを備える；請求項1に記載の撮影端末装置。

【請求項3】 撮影対象を撮影して画像データを生成する撮影装置と；前記生成された画像データを保存する画像保存部と；前記保存された画像データを、遠隔のサーバに送信する送信装置に出力する出力部と；前記画像保存部の保存領域中、前記送信装置で遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるように制御するコントローラと；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成装置とを備え；前記付加データを前記画像データと共に前記遠隔のサーバに送信するように構成された；撮影端末装置。

【請求項4】 遠隔の撮影端末装置から送信される画像データを受信する受信部と；前記撮影端末の利用者に係る利用者情報を保存する利用者情報データベースと；前記利用者データベース中の利用者情報に対応させて前記受信した画像データを保存する画像データ保存部とを備える；画像処理サーバ。

【請求項5】 前記画像データ保存部に保存された画像データを、加工する加工部を備える、請求項4に記載の画像処理サーバ。

【請求項6】 前記保存された画像データを、利用者の求めに応じて出力する出力部を備える、請求項4または請求項5に記載の画像処理サーバ。

【請求項7】 撮影対象を撮影して画像データを生成する撮影工程と；前記生成された画像データを保存する画像保存工程と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成工程と；前記保存した画像データを、前記付加データと共にリアルタイムに遠隔のサーバに送信する送信工程とを備え；前記生成される画像データと前記送信される画像データとの差分が蓄積される；撮影方法。

【請求項8】 遠隔の撮影端末装置から送信される画像データを受信する受信工程と；前記撮影端末の利用者に係る利用者情報を保存する利用者情報保存工程と；前記保存された利用者情報に対応させて前記受信した画像データを保存する画像データ保存工程とを備える；画像処理方法。

【請求項9】 前記保存された画像データを加工する加工工程と；前記加工された画像データを、利用者の求めに応じて出力する出力工程を備える；請求項8に記載の画像処理方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、撮影端末装置、画像処理サーバ、撮影方法及び画像処理方法に関し、特に撮影により得られた画像データを遠隔のサーバに送信できる撮影端末装置、画像処理サーバ、撮影方法及び画像処理方法に関するものである。

【0002】

【従来の技術】従来から、撮影対象を撮影して画像データを生成するデジタルカメラがあった。これは、撮影した画像を銀塩写真に用いられるフィルムの代わりに、デジタルデータとして生成して、記憶装置に保存するようにしたものである。

【0003】

【発明が解決しようとする課題】以上のような従来のデジタルカメラによれば、備えられた記憶装置の記憶容量内でしか撮影をことができなかった。また、撮影時に取得できる情報は、画像のデジタルデータのみであり、写真に付随するべきあらゆる情報（例えば撮影地）は別のデバイスや手法（例えば筆記）で記録しなければならなかった。

【0004】画像データは、デジタルカメラに備えられた記憶装置に依存するので、効率的な管理ができない。また、撮影した画像データや情報の整理は、人が自分の手でやらなければならなかった。

【0005】そこで本発明は、カメラに備えられた記憶装置に依存することなく事実上無限に撮影ができる、撮影時の付加的情報が撮影と同時に記録される撮影端末装置、画像処理サーバ、撮影方法及び画像処理方法を提供することを目的としている。

【0006】

【課題を解決するための手段】上記目的を達成するため、本発明による撮影端末装置100は、例えば図2に示すように、撮影対象を撮影して画像データを生成する撮影部114と；前記生成された画像データをリアルタイムに遠隔のサーバに送信する送信装置110と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成装置111、115とを備え；前記付加データを前記画像データと共に前記遠隔のサーバに送信するように構成する。

【0007】撮影端末装置100は、典型的にはデジタルカメラに「モード（商標）携帯電話のような機能を組み込んだデバイスである。

【0008】このように構成すると、撮影対象を撮影して画像データを生成する撮影部114と、画像データをリアルタイムに遠隔のサーバに送信する送信装置110

と、画像データの他に付加的情報に関する付加データを生成する付加情報生成装置111、115を備え、付加データを画像データと共に遠隔のサーバに送信するので、撮影時に付加的情報を別に記録する必要がなくなるだけでなく、遠隔サーバに接続可能な場所であれば、事実上無限に撮影することができる。

【0009】また付加的情報は、例えば撮影している地点の地理情報であり、付加データはその地点を特定する撮影地点特定データである。またスチル写真等に対する説明としてのマイクを通した音声による画像の解説や撮影地の音であってもよく、キーボードからの入力データや撮影時間でもよい。

【0010】上記撮影端末装置100では、前記生成された画像データを保存する画像保存部117と；前記画像保存部117の保存領域中、前記送信装置110で遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるように制御するコントローラ113とを備えるようにしてもよい。

【0011】このように構成すると、画像保存部117と、画像保存部117の保存領域中、送信装置110で遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるように制御するコントローラ113とを備えるので、遠隔のサーバに接続できない場合や、送信装置110の送信速度が撮影速度より遅い場合でも撮影を継続することができる。また、画像保存部117の遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるので、画像保存部117の保存領域を効率良く使用できる。

【0012】また、本発明による別の撮影端末装置100は、例えば図2に示すように、撮影対象を撮影して画像データを生成する撮影装置114と；前記生成された画像データを保存する画像保存部117と；前記保存された画像データを、遠隔のサーバに送信する送信装置110に出力する出力部119と；前記画像保存部117の保存領域中、前記送信装置110で遠隔のサーバに送信済みの保存領域に、新たな画像データを保存できるように制御するコントローラ113と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成装置111、115を備え；前記付加データを前記画像データと共に前記遠隔のサーバに送信するように構成する。

【0013】このように構成すると、保存された画像データを、遠隔のサーバに送信する送信装置110に出力する出力部119を備えるので、画像データを遠隔のサーバに送信できる。

【0014】また、以上の撮影端末装置100は、遠隔のサーバから画像データを入力する入力部119を備えるとよい。

【0015】そして、以上の撮影端末装置100は、前記画像保存部117と前記コントローラ113との間

に、バッファ記憶部122を備えてよい。

【0016】さらに、以上の撮影端末装置100では、画像データの画像は典型的には静止画であるが、動画であってもよい。

【0017】前記目的を達成するために、本発明による画像処理サーバ200は、例えば図3に示すように、遠隔の撮影端末装置100から送信される画像データを受信する受信部205と；前記撮影端末装置100の利用者に係る利用者情報を保存する利用者情報データベース210と；前記利用者データベース210中の利用者情報に対応させて前記受信した画像データを保存する画像データ保存部208とを備える。

【0018】このように構成すると、遠隔の撮影端末装置100から送信される画像データを受信する受信部205と、撮影端末の利用者に係る利用者情報を保存する利用者情報データベース210と、利用者データベース210中の利用者情報に対応させて受信した画像データを保存する画像データ保存部208とを備えるので、撮影端末装置100から受信した利用者情報と画像データを対応させ、記憶装置に効率良く保存することができる。

【0019】また、上記画像処理サーバ200は、前記画像データ保存部208に保存された画像データを、加工する加工部203を備えるとよい。これにより、サーバ管理者が利用者の求めに応じて、サーバ側で画像データを加工することができる。また、加工とは、例えば画像データ保存部に画像データを保存する場合に、画像データを保存用のフォーマットに変更したり、利用者の求めに応じて画像データを出力する場合に、出力用フォーマットに変更する他に、画像データのトリミングやテキスト入力などの画像データの編集をすることをいう。

【0020】さらに、以上の画像処理サーバ200は、前記保存された画像データを、利用者の求めに応じて出力する出力部205を備えるとよい。これにより、利用者は画像データを簡単に引き出すことができる。画像データの引出しは、典型的にはパソコン等でダウンロードにより行う。

【0021】以上の画像処理サーバ200では、画像データの画像は典型的には静止画であるが、動画であってもよい。

【0022】前記目的を達成するために、本発明による撮影方法は、例えば図7に示すように、撮影対象を撮影して画像データを生成する撮影工程705と；前記生成された画像データを保存する画像保存工程712と；前記生成された画像データの他に付加的情報に関する付加データを生成する付加情報生成工程708と；前記保存した画像データを、前記付加データと共にリアルタイムに遠隔のサーバ200に送信する送信工程710とを備え；前記生成される画像データと前記送信される画像データとの差分が蓄積される。

【0023】このように構成すると、画像データの他に付加的情報に関する付加データを生成する付加情報生成工程708と、保存した画像データを、付加データと共にリアルタイムに遠隔のサーバ200に送信する送信工程710とを備えるので、撮影時に付加的情報を別に記録する必要がなくなり、利用者は撮影に集中することができる。

【0024】また、画像データをリアルタイムに遠隔のサーバ200に送信する送信工程710を備え、生成される画像データと送信される画像データとの差分が蓄積されるので、画像データをリアルタイムに遠隔のサーバ200に送信することで、保存する画像データを最小限に抑えることができ、記憶装置を効率良く使用できる。このため撮影可能な撮影数を事実上無限にすることができます。また、画像データが動画データの場合は、送信速度が撮影速度より遅くても撮影を継続することができます。

【0025】生成される画像データと送信される画像データとの差分が蓄積されるとは、画像が生成される速さ（以下適宜生成速さという）と、画像が送信される速さ（以下適宜送信速さという）との差分が蓄積されることである。即ち送信速さが生成速さを常に上回っていれば、画像保存部117に画像データは蓄積されない。また蓄積とは、画像保存部117に保存されている送信前の画像データの量が増加することをいう。

【0026】前記目的を達成するために、本発明による画像処理方法は、例えば図7に示すように、遠隔の撮影端末装置100から送信される画像データを受信する受信工程713と；前記撮影端末装置100の利用者に係る利用者情報を保存する利用者情報保存工程715と；前記保存された利用者情報に対応させて前記受信した画像データを保存する画像データ保存工程717とを備える。

【0027】また、上記画像処理方法は、例えば図8に示すように、前記保存された画像データを加工する加工工程816と；前記加工された画像データを、利用者の求めに応じて出力する出力工程817を備えるとよい。

【0028】

【発明の実施の形態】以下、本発明の実施の形態について、図面を参照して説明する。なお、各図において互いに同一あるいは相当する部材には同一符号または類似符号を付し、重複した説明は省略する。

【0029】図1は、本発明による実施の形態である撮影端末装置、画像処理サーバを含んで構成される運用システムである撮影画像処理システム（以下適宜画像処理システムという）の概略ブロック図である。画像処理システムを利用しようとする各利用者（撮影者あるいは閲覧可能者といつてもよい）は、撮影端末装置100/1、100/2、100/3または閲覧端末装置101/1、101/2、101/3を操作する。以下、個々

の撮影端末装置を区別して説明する必要のないときは、単に撮影端末装置100といい、個々の閲覧端末装置を区別して説明する必要のないときは、単に閲覧端末装置101という。撮影端末装置100及び閲覧端末装置101は、ネットワーク99を介して、サーバ200側に装備された画像処理システムに接続されている。

【0030】ここで、撮影端末装置100は、典型的にはデジタルカメラにiモード（商標）携帯電話のような機能を組み込んだデバイスであるが、携帯電話の代わりに専用の通信端末、例えば携帯電話の通話機能等を除し、画像データ送信または受信する機能のみを備えるようにすることで、小型軽量化したデバイスであってもよい。また、撮影端末装置100は、閲覧端末装置101としても機能するようにしてもよい。

【0031】閲覧端末装置101は、典型的にはコンピュータであるが、パソコンの他、IC（集積回路、LSIも含む）を組み込んだ携帯電話、ICを組み込んだWebTV、ICを組み込んだ情報家電を広く含む。即ち閲覧端末装置101は、インターネットが利用可能な既存の汎用機を利用可能である。

【0032】利用者である撮影者は、この撮影端末装置100を用いて、撮影対象を撮影する。撮影で生成された画像は、撮影端末装置100から見れば外部に設置されたサーバ200に送信される。撮影端末装置100は、少なくとも撮影者の数だけ、つまり複数存在する。ネットワーク（以下単にネットといふこともある）99は、インターネット、電話回線などのコンピュータネットワークに限らず、TV電波、衛星インターネット、ケーブル線、TV隙間電波など、様々な形態をとることができる。画像処理システムは、サーバ200としてのパソコンやワークステーション、メインフレームなど、種々のコンピュータ上で実装される。

【0033】撮影端末装置100及び閲覧端末装置101とサーバ200とは、ネットワーク99を構成する回線を通じて直接的に接続されてもよいし、ネットワーク上のプロバイダーを介して接続されてもよい。プロバイダーは複数であってもよい。また、無線通信で直接的に接続されてもよい。

【0034】図2は、各利用者が使用する撮影端末装置100の構成例を示すブロック図である。

【0035】利用者は、撮影端末装置100に備えられた操作入力部111を用いて、撮影端末装置100に対して操作命令を発したり、撮影時の情報等を入力したりする。操作入力部111は、例えばキー、マイク（音声を入力する場合）、リモコン、タッチスクリーン等である。

【0036】また、画像処理システムの画面や入力情報、装置の状態等を表示するためには、撮影端末装置100に備えられた情報出力部112を用いる。情報出力部112は、例えば液晶表示装置等のディスプレイやプ

リントである。操作入力部111及び情報出力部112は、撮影端末装置100中に一体に含まれているものとして図示してあるが、別体であってもよい。また、操作入力部111及び情報出力部112は、撮影端末装置100に備えられた制御部113に接続されており、制御部113によって制御されている。

【0037】撮影端末装置100は、撮影して画像データを生成する撮影部114を備えている。撮影部114は、制御部113に接続されており、制御部113によって制御されている。利用者が撮影対象を撮影するときは、操作入力部111を使い撮影部114を作動させて撮影する。画像データは制御部113を介してサーバ200へ送信、又は撮影画像データベース118（以下適宜DBという）に保存される。

【0038】また、撮影端末装置100は、撮影場所の位置データを受信するためのGPSアンテナ115を備えている。GPSアンテナ115は、制御部113に接続されており、人工衛星102からの信号102aを受信することができる。制御部113は、GPSアンテナ115より受信した信号102aを基に位置データを算出し、算出された位置データ（例えば、緯度○×°、経度△□°）を画像データと関係付けて送信、又は撮影画像DB118に記録する。また、この位置データは、既存のカーナビゲーションシステム等のナビゲーションシステムに転送可能にするとよい。これにより、他の利用者が同じ撮影場所に行く場合には、ナビゲーションシステムを使用できるので、容易にその撮影場所に行くことができる。

【0039】このとき操作入力部111より入力された撮影時の情報（例えば音声）と、制御部113に接続された時計部116から出力される時間データも画像データと関係付けて送信又は撮影画像DB118に記録する。これらの付加的情報を付加データとして画像データに付したもの撮影画像データという。また、付加データの撮影画像DB118への記録は、画像データの記録と同時にを行うようにするとよい。

【0040】また、制御部113には、通信インターフェース119が接続されており、通信装置110に撮影画像データを送信したり、サーバ200より、画像データファイルや情報、プログラムモジュール等を受信したりする。さらに通信インターフェース119には、通信装置110が接続されており、通信インターフェース119から送受信したデータをサーバ200に送受信する。通信装置110は、典型的にはiモード（商標）のような機能を持った携帯電話である。また、通信装置110に入出力装置等（例えば操作入力装置）が備えられている場合は、通信装置110からでも、撮影端末装置100を操作できるようにするとよい。

【0041】制御部113には、画像保存部117が接続され、画像保存部117には、サーバ200に送信し

なかった画像データ等を記録する撮影画像DB118などが保存されている。また、画像保存部117には、サーバ200よりダウンロードした画像データファイル、プログラムモジュール、利用情報や撮影端末装置100の操作情報などが保存できる。さらに、画像保存部117は、着脱式であり交換可能にしてもよい。このようにすることで、例えば画像データをサーバ200に送信不可能でないときに、画像保存部117の記憶容量まで撮影した場合でも、別の画像保存部117に交換することで、さらに撮影が可能になる。

【0042】制御部113と画像保存部117との間に、バッファ記憶部122が備えられている。これにより、例えば前述の画像保存部117の交換時でも、撮影画像データをバッファ記憶部122に保存することで、撮影が可能になるため、利用者は、不意に起こる事件も撮影の機会を逃すことがない。また、バッファ記憶部122は、再び画像保存部117が装着された時に、保存してある撮影画像データを画像保存部117に移動し、保存可能な容量を可能な限り確保するように、制御部113によって制御されている。

【0043】また、画像保存部117は、撮影画像DB118のサーバ200に送信済みの撮影画像データの保存領域に、新たな撮影により生成された撮影画像データを保存できるように、制御部113により制御されている。

【0044】さらに、制御部113には、データ入力部120、データ出力部121が接続されている。このデータ入出力部120、121は、他の撮影端末装置100やパソコン等のコンピュータ、デジタルカメラ等と接続して、直接的に撮影画像データ等を送受信したり、別の通信デバイス（例えばモ뎀等）を接続して、撮影画像データ等を送受信する。また、データ入力部120には、キーボード等の入力装置が接続でき、データ出力部121には、ディスプレイやプリンタ等の出力装置が接続できる。

【0045】図3は、ネット99を介して撮影端末装置100と接続される画像処理サーバ200（以下適宜サーバ200という）の構成例を示すブロック図である。この画像処理サーバ200で、サーバ側の画像処理システムである個人認証システム207が作動する。

【0046】このシステムは、画像処理サーバ200内に実装される。本システムは、パソコン、ワークステーション、メインフレームなど、様々なコンピュータで実装可能である。画像処理サーバ200には、画像処理システムの制御を行う制御部203が備えられている。また、画像処理サーバ200には、画像処理サーバ200を操作するための情報を入力する入力装置201、画像処理サーバ200で処理された結果を出力する出力装置202が接続されている。入出力装置201、202は、制御部203に対して、I/Oインターフェース2

04で接続されている。I/Oインターフェース204は、入力装置（キーボードなど）201や出力装置（ディスプレイなど）202をコントロールする。

【0047】制御部203には、通信インターフェース205が接続されており、これを介して、さらにネット99を介して、各利用者の使用する撮影端末装置100から、撮影画像データを受信する。また、各利用者の使用する撮影端末装置100や閲覧端末装置101へ、画像データファイルや画像処理システムに関する様々な情報を送受信する。

【0048】また、制御部203は、利用者が利用する画像処理サーバ200に実装される画像処理システムである個人認証システム制御部207（以下適宜個人認証システムという）を備えている。個人認証システム制御部207は、ネットワーク99を介して利用者によってアクセスされるようになっており、また必要に応じて、あるいは必要な部分だけを利用者のデバイスへダウンロードできるようになっている。個人認証システム部207は、利用者が撮影画像データを送信したり、送信した画像を閲覧する際に使用される。

【0049】本実施の形態では、このシステム中には、個人認証モジュール、画像処理モジュール、画像閲覧モジュールが含まれている。これらのモジュールは必要なものを適宜選択してシステムを構成すればよく、またここに挙げたモジュールに限定されるものではない。

【0050】制御部203には、画像処理システムに必要な情報、データを記憶しておく記憶装置206が接続されている。本実施の形態では、記憶装置206は、画像記憶部208、利用者情報データベース210、一時記憶データベース、画像閲覧データベース、地図データベースを含んでいる。また、記憶装置206に保存されているデータベースやファイルなどはここに挙げたものに限定されるものではない。画像記憶部208には、受信した撮影画像データなどを、記憶装置206に保存するのに最適な処理をした画像ファイル209が保存されている。

【0051】また、本実施の形態では、画像記憶部208と利用者情報DB210は、画像処理サーバ200の記憶装置206に保存してあるとして説明したが、それぞれ別体の装置、例えば画像記憶部208は画像ファイルサーバとして、利用者情報DB210は利用者情報サーバとしてもよい。

【0052】図4、図5は、個人認証システム207の機能の一例の概略を示すブロック図である。図4を参照して、利用者が撮影画像データを画像処理サーバ200へ送信する場合を説明する。

【0053】利用者である撮影者は、撮影対象を撮影して得られた撮影画像データを撮影端末装置100（図2）で画像処理サーバ200内の個人認証システム207に送信する（401）。このとき、予め登録された撮

影者の個人認証情報が送信する撮影画像データに対応させて記録される。

【0054】撮影者の撮影画像データを受信した個人認証システム207は、まず撮影画像データを一時記憶DBに保存する（402）。次に保存した撮影画像データの個人認証情報を確認し、この撮影者の個人認証情報を利用者情報DB210から読み出す（403）。読み出した個人認証情報から受信した個人認証情報が正しいことを判断すると、撮影画像データから撮影時の情報の一部もしくは全部を読み出し（404）、利用者情報DB210に保存する（405）。また、撮影画像データは、画像記憶部208（図3）に保存するのに最適な画像ファイル209に加工処理をして、画像記憶部208に保存する（406）。この画像ファイル209の保存情報も利用者情報DB210に保存される。ここでいう保存するのに最適な画像ファイルとは、例えば、撮影時の情報などの付加データは、利用者情報DB210に保存したうえで削除し、画像データのみとすることである。さらに画像データを圧縮した状態にすることで、保存するファイルサイズを小さくするようにしてもよい。

【0055】次に、図5を参照して利用者である撮影者もしくは閲覧可能者が画像処理サーバ200に保存されている画像を閲覧する場合について説明する。閲覧可能者とは、撮影者が画像処理サーバ200に保存している画像データを閲覧することを許された者をいう。撮影者は、自身が画像処理サーバ200に保存してある各画像データごとに、閲覧可能者を登録することができる。

【0056】利用者は、閲覧端末装置101もしくは撮影端末装置100を使用し、個人認証情報を送信して画像処理サーバ200の個人認証システム207にログインする（501）。利用者は個人認証システム207にログインすると、閲覧したい画像データ等を個人認証システム207に要求する。

【0057】個人認証システム207は、受信した個人認証情報より、利用者情報DB210から画像記憶部208に保存されている画像データの一覧等、利用者の要求に応えるために必要な情報を読み出し（502）、一時記憶DBに保存する（503）。そして、一時記憶DBに保存した情報を読み出すことにより（504）、必要な画像ファイル209を読み出し（505）、一時記憶DBに保存する（503）。

【0058】次に、個人認証システム207は、利用者が画像を閲覧するためのページを形成するのに必要な情報を画像閲覧DBより読み出す（506）。これと、一時記憶DBに保存されている情報と画像ファイル209より、閲覧ページを形成する。利用者は、この閲覧ページより画像処理サーバ200に保存してある画像を閲覧できる。閲覧ページは、典型的にはホームページ（例えばHTMLファイルで形成されるページ）である。

【0059】利用者が画像を閲覧した際に、画像に編集

を加えた場合は、編集された情報は利用者情報D B 2 1 0に保存され(507)、編集された画像ファイル2 0 9は画像記憶部2 0 8に保存される(508)。また、閲覧可能者の登録はここでも行える。

【0060】また、利用者が画像ファイル2 0 9をダウンロードする場合は、個人認証システム2 0 7は、画像ファイル2 0 9を利用者の要求するフォーマットに変更処理して、閲覧端末装置1 0 1もしくは撮影端末装置1 0 0にダウンロードする(509)。

【0061】また、画像の出力は、画像処理サーバ2 0 0に備えられた出力装置2 0 2(図3)でも行えるようになるとよい。例えば出力装置2 0 2は、汎用機より高価で高性能な印刷機(例えばカラーコピー機)とする。そしてこの印刷機を使用して画像を出力することにより、より品質の良い印刷画像を一般の人にも提供することができるようになる。

【0062】利用者が画像処理システムを利用する場合は、まず画像処理サーバ2 0 0の個人認証システム2 0 7に登録をする必要がある。図6は、利用者が個人認証システム2 0 7に登録を行う場合の処理の一例をフローチャートで示したものである。登録の処理は、個人認証システム2 0 7内の個人認証モジュールが行う。

【0063】まず、利用者は撮影端末装置1 0 0を使用して、ネットワーク9 9(図1)を介して、画像処理サーバ2 0 0に接続する(ステップ6 0 1)。

【0064】次に利用者は、利用者自身の情報(氏名、住所、電話番号、メールアドレス等)、利用者が使用している撮影端末装置1 0 0の情報などを入力、画像処理サーバ2 0 0に送信する(ステップ6 0 2)。

【0065】画像処理サーバ2 0 0の個人認証システム2 0 7は、送信されてきた利用者情報を受信すると(ステップ6 0 3)、個人認証モジュールを使用して、利用者IDとパスワードを発行する(ステップ6 0 4)。そして、受信した利用者情報、利用者ID、パスワードを利用者情報D B 2 1 0に登録する(ステップ6 0 5)。また、利用者ID、パスワードを撮影端末装置1 0 0に送信する(ステップ6 0 6)。

【0066】撮影端末装置1 0 0は、送信されてきた利用者ID、パスワードを受信する(ステップ6 0 7)。この時、受信した利用者ID、パスワードを画像保存部1 1 7もしくは通信装置1 1 0が記憶デバイスを備えている場合は、この記憶デバイスに登録しておくと、個人認証システム2 0 7に接続するたびに利用者ID、パスワードを入力する必要がなくなり便利である。

【0067】以上で、個人認証システム2 0 7への登録が完了する(ステップ6 0 8)。

【0068】画像処理サーバ2 0 0の個人情報システムに登録を完了した利用者は、画像処理システムを利用することができる。図7は、利用者が撮影対象を撮影して生成された画像データを画像処理サーバに送信し、保存

する場合の処理の一例をフローチャートで示したものである。

【0069】まず、撮影者は撮影端末装置1 0 0を作動させ、ネット9 9(図1)を介して画像処理サーバ2 0 0に接続し(ステップ7 0 1)、利用者認証情報を送信する(ステップ7 0 2)。ここで、撮影端末装置1 0 0と画像処理サーバ2 0 0間の通信は、最近の携帯電話等にも使用されているパケット通信とするとい。これにより、接続を維持していても、通信したデータ量にしか通信料が課金されないので、撮影者は安心してサーバ2 0 0との接続を維持したまま撮影ができる。

【0070】そして、画像処理サーバ2 0 0の個人認証システム2 0 7は、利用者認証情報を受信し(ステップ7 0 3)、個人認証モジュールを作動させる。個人認証モジュールは、利用者情報D B 2 1 0に記録されている利用者認証情報と受信した利用者認証情報を比較し、利用者を確認して、接続を維持する(ステップ7 0 4)。また、以上の接続動作は、撮影端末装置1 0 0を作動させた時または撮影をした時に、撮影端末装置1 0 0が自動で行うように設定することができる。この設定をしておけば、撮影者はサーバ2 0 0との接続を意識することなく、従来のカメラと同じように撮影に集中できる。

【0071】次に撮影対象を撮影する(ステップ7 0 5)。このとき撮影者は、操作入力部1 1 1より撮影指示を入力する(シャッタボタンを押す)。入力された撮影指示により制御部1 1 3は、撮影部1 1 4に備えられたシャッタを作動し、撮影する。

【0072】撮影によって得られた画像データは、制御部1 1 3を介して、バッファ記憶部1 2 2に保存される。(ステップ7 0 6)。このとき制御部1 1 3は、GPSアンテナ1 1 5が受信した信号1 0 2 aを入力し、この信号1 0 2 aから撮影場所の位置データを算出する(ステップ7 0 7)。そして、算出した位置データと、時計部1 1 6より入力した時間データから付加データを生成し、保存された画像データに関連付けて撮影画像データとしてバッファ記憶部1 2 2に保存する(ステップ7 0 8)。時間データは、算出された位置データにより時差が補正された撮影場所の時間である。また、撮影者が入力する撮影時の情報は、撮影者が情報(例えば音声)を入力したときに、付加データに記録される。

【0073】次に、制御部1 1 3は、画像処理サーバ2 0 0に撮影画像データが送信可能かを判断する(ステップ7 0 9)。送信可能の場合は(ステップ7 0 9がY)、画像処理サーバ2 0 0に撮影画像データを送信し(ステップ7 1 0)、次の撮影に入る(ステップ7 1 1)。送信が可能でない場合は(ステップ7 0 9がN)、撮影画像データを画像保存部1 1 7の撮影画像D B 1 1 8に保存して(ステップ7 1 2)、次の撮影に入る(ステップ7 1 1)。また、撮影画像D B 1 1 8に保存された撮影画像データは、撮影者が送信を禁止した場

合を除き、送信可能になり次第、自動的に送信される。【0074】画像処理サーバ200の個人認証システム207は、撮影画像データを受信すると、個人認証モジュールを使用し、受信した撮影画像データの利用者認証情報を確認した後（ステップ713）、一時記憶DBに保存する（ステップ714）。

【0075】個人認証モジュールは、一時記憶DBに保存した撮影画像データより、付加的情報（撮影日時など）を読み出し、利用者情報DB210に保存する（ステップ715）。

【0076】次に、個人認証システム207は、画像処理モジュールを使用して撮影画像データを画像ファイル209に加工処理して（ステップ716）、画像ファイル209を画像記憶部208に保存する（ステップ717）。

【0077】次の撮影がある場合は、ステップ705から繰り返し、次に撮影がない場合は、サーバ200との接続を終了する。また、サーバ200との接続は、データの通信が行われない時間が、所定の時間（例えば3分程度）経過すると、サーバ200側から自動的に切断されるようにしててもよい。

【0078】利用者（撮影者もしくは閲覧可能者）は、画像処理サーバに保存された画像を閲覧することができる。図8は、画像処理サーバに保存された画像を閲覧する場合の処理の一例をフローチャートで示したものである。

【0079】まず、ネット99（図1）を介して画像処理サーバ200に接続し（ステップ801）、利用者認証情報を送信する（ステップ802）。

【0080】そして、画像処理サーバ200の個人認証システム207は、利用者認証情報を受信し（ステップ803）、個人認証モジュールを作動させる。個人認証モジュールは、利用者情報DB210に記録されている利用者認証情報と受信した利用者認証情報を比較し、利用者を確認する（ステップ804）。

【0081】次に、個人認証システム207は、画像閲覧モジュールを作動させて、画像閲覧DBに保存されているメニューデータを読み出して、メニューページを形成する（ステップ805）。形成したメニューページを閲覧端末装置101へ送信する（ステップ806）。

【0082】閲覧端末装置101は、メニューページを受信し、ディスプレイなどの出力装置で表示する（ステップ807）。利用者は、メニューページを参照し、必要な画像の情報（例えば撮影日付）を入力して、画像処理サーバ200へ送信する（ステップ808）。

【0083】画像処理サーバ200は、必要な画像の情報を受信すると（ステップ809）、これを基に個人認証モジュールを使用して、利用者情報DB210を検索する（ステップ810）。そして、検索した結果を検索結果ページに表示して（ステップ811）、閲覧端末装

置101に送信する（ステップ812）。なお、検索結果ページは、画像閲覧モジュールを使用して、画像閲覧DBに保存されている検索ページデータを読み出して、検索結果ページを形成する。

【0084】閲覧端末装置101は、検索結果ページを受信し、ディスプレイなどの出力装置で表示する（ステップ813）。利用者は、検索結果ページを参照し、検索結果から閲覧したい画像ファイルを選択する。これにより閲覧端末装置101は、画像を閲覧したい旨と閲覧したい画像の情報を画像処理サーバ200へ送信する（ステップ814）。

【0085】画像処理サーバ200は、画像を閲覧したい旨と閲覧したい画像の情報を受信すると（ステップ815）、これを基に個人認証モジュールと画像処理モジュールを使用して、利用者情報DB210から撮影時の情報を、画像記憶部から画像ファイル209を読み出す。これらを閲覧ページに表示して（ステップ816）、閲覧端末装置101に送信する（ステップ817）。なお、閲覧ページは、画像閲覧モジュールを使用して、画像閲覧DBに保存されている閲覧ページデータを読み出して、閲覧ページを形成する。

【0086】閲覧端末装置101は、閲覧ページを受信し、ディスプレイなどの出力装置で表示する（ステップ818）。利用者は、表示された閲覧ページにより、画像の閲覧をする（ステップ819）。

【0087】利用者が画像を閲覧する場合には、閲覧端末装置101のディスプレイに表示されたページ（Webページ）を参照しながら、操作を行う。以下、ディスプレイに表示されるページの例を参照して、それぞれのページでの利用者の操作の例を説明する。また、操作はマウスとキーボードで行うものとする。

【0088】図9は、利用者が画像を閲覧するときにディスプレイに表示されるメニューページの一例を示した図である。利用者が画像を閲覧するときには、まずメニューページを参照する。メニューページでは、画像を検索やシステムの運用情報などを見ることができる。利用者が画像を閲覧したいときは、このページで画像の検索をする。

【0089】利用者が画像の検索を行う場合は、まず検索対象を入力する。検索対象は撮影日付、撮影場所など撮影時の情報にすると検索が行いやすい。ここで、検索対象を撮影日付と撮影場所として、検索を行うとする。

【0090】利用者は、撮影日付の入力欄902、903、904にカーソルを合わせて年、月、日を入力する。入力するのは、例えば年だけでもよいし、日だけでもよい。そして、撮影場所の入力欄905、906にカーソルを合わせて国、地名を入力する。地名は、例えば東京都でもよいし、永田町だけでもよい。入力するのは、例えば国だけでもよいし、地名だけでもよい。

【0091】検索対象の入力が完了したら、ページに備

えられた検索開始ボタン901にマウスカーソルを合わせてクリックする。これで画像の検索が開始する。

【0092】図10は、利用者が画像を閲覧するときにディスプレイに表示される検索結果ページの一例を示した図である。利用者が画像の検索を行った場合には、検索の結果は、検索結果ページで表示される。検索結果ページでは、画像の撮影時の情報の参照、閲覧したい画像の選択操作、画像のダウンロードを行うことができる。

【0093】検索結果ページには、検索に使用した検索対象1001が表示されている。そして、検索の結果には、検索対象に該当する画像の画像プレビュー100

2、画像のコメント1003が表示される。

【0094】利用者は、検索結果ページで検索の結果を参照して、閲覧する画像があれば、その画像プレビュー1002にマウスカーソルを合わせクリックする。これで選択した画像を閲覧できる。

【0095】また、音声情報を聞きたい場合は、ページに備えられた音声情報ボタン1004にマウスカーソルを合わせてクリックすれば、音声情報を聞くことができる。さらに、ダウンロードしたい場合は、ページに備えられたダウンロードボタン1005にマウスカーソルを合わせてクリックすれば、画像をダウンロードすることができる。

【0096】利用者が、画像プレビュー1002にマウスカーソルを合わせクリックすると、ディスプレイに閲覧ページが表示される。利用者は、この閲覧ページで画像を閲覧する。

【0097】図11は、利用者が画像を閲覧するときにディスプレイに表示される閲覧ページの一例を示した図である。利用者が閲覧する画像は、閲覧ページに表示される。閲覧ページでは、画像と画像の撮影時の情報が全て参照可能であり、他には画像の編集操作、画像のダウンロードを行うことができる。

【0098】閲覧ページには、利用者が閲覧する画像101が表示されている。そして、その画像の撮影日時1102、撮影場所の地図1103と地理情報1104、画像のコメント1105が表示される。撮影場所の地図1103は、個人認証システム207の画像閲覧モジュールが、画像の位置データから撮影場所周辺の地図を記憶装置206(図3)に保存された地図DBから地図データを読み出して地図を作成し、その地図上に撮影場所を示したものである。

【0099】撮影場所の地図1103は、ページに備えられた拡大ボタン1106、縮小ボタン1107をクリックすることで、地図を拡大、縮小表示できる。これにより、利用者は、撮影場所をより正確に知ることができるので、例えば再び同じ場所で撮影をしたい場合などに、利便性が高い。

【0100】利用者が画像を編集したい場合は、ページに備えられた編集ボタン1108をクリックすること

で、例えば画像のトリミングや明暗及び色調補正、テキスト入力などの編集が行える。本実施の形態では、画像の編集は、画像閲覧モジュールで行うが、実際には別に画像の編集を行うための編集モジュールを備えるようになるとよい。

【0101】また、画像のコメント1105は、このコメントをクリックすれば編集可能である。音声情報を聞きたい場合は、ページに備えられた音声情報ボタン1109をクリックすれば、音声情報を聞くことができる。また、ここで音声情報の編集も可能である。

【0102】画像をダウンロードしたい場合は、ページに備えられたダウンロードボタン1110にマウスカーソルを合わせてクリックすれば、ダウンロードすることができる。またダウンロードは、サーバ200が画像を受信したときに、指定した閲覧端末装置101に自動的にされるように設定することもできる。

【0103】また、閲覧ページは、利用者がカスタマイズすることも可能である。これにより、利用者は、ページ用途や使い勝手にあわせて、閲覧ページを作成できる。

【0104】以上の実施の形態が、画像処理システムの撮影から画像の閲覧までの処理であるが、先にも述べた通りこれは一例であり、これに限られるものではない。

【0105】ここで、利用者が撮影したい場所に出掛け、撮影端末装置100で撮影を行ったとする。この時に、利用者が本発明の撮影端末装置100であるカメラAを使用した場合と、従来のカメラBを使用した場合とを比較した例を説明する。以下カメラAもしくはカメラBの区別が無い場合は、単にカメラという。

【0106】図12は、実施の形態としての本発明のカメラAを使用した場合と、比較例としての従来のカメラBを使用した場合とを示す図である。図12を参照して、利用者が行う撮影から撮影して得た画像の保管までの手順において、本発明のカメラAを使用した場合と、従来のカメラBを使用した場合とを比較した例を説明する。利用者は、まずカメラAまたはカメラBを使って撮影対象を撮影して、画像データを得る。

【0107】従来のカメラBでは、利用者はカメラBを使用して撮影した後、自宅や会社等に戻ってから、撮影で得た画像データを、カメラBまたは画像データが保存された記録メディアから、画像データを引き出して、パソコンなどを使用して整理していた。そして、整理した画像データは、画像データが保存された記録メディアそのものにラベルなどを貼って保管していた。このために、利用者は画像データの整理に手間がかかるだけでなく、画像データが複数の記録メディアに分散する場合も多く、効率的な保管や管理が難しかった。

【0108】これに対して本発明のカメラAでは、利用者がカメラAで撮影して得た画像データは、撮影したと同時に自動的にサーバに送信され、サーバに保存され

る。これにより、利用者は、画像データの整理に手間がかからなくなる。また、画像データは一括してサーバに保管されるので効率的な保管が可能になる。そして、画像データをサーバに送信する時に、撮影時の情報も画像データに付加して送信されるので、画像データの管理も効率的に行えるようになる。

【0109】さらに、カメラAを使用した場合には、画像データは撮影した直後にサーバに保存されるので、万が一カメラAが破壊または損傷しても画像データが失われてしまう心配はない。

【0110】図13は、実施の形態としての本発明のカメラAを使用した場合と、比較例としての従来のカメラBを使用した場合とを示す図である。図13を参照して、利用者がカメラを買い替えた場合を説明する。

【0111】従来では、多くの場合にカメラBと買い替えたカメラB'とは、記憶メディアや画像データのフォーマットが違っていた。このため、カメラB'で撮影して得た画像データは、今まで使用していたデータベースソフトに保存することができないため、別のデータベースソフトに保存することになる。また、カメラB'の画像データをパソコンなど引き出すとき必要な接続デバイスも別に用意しなければならない。よって利用者は、複数の記憶メディアやデータベースソフトを管理することになり、より高性能な新しいカメラB'に替えたとしても、結局不自由を強いられてしまう。

【0112】これに対して本発明のカメラAでは、カメラAをカメラA'に買い替えたとしても、撮影して得た画像データは、同一のフォーマットでサーバ200に保存されるので、カメラの記憶メディアや画像データのフォーマットの違いを気にする必要がなくなる。また、通信装置110(図2)にiモード(商標)のような機能を持つ携帯電話を使用していた場合は、通信装置110が個人認証情報等を記憶しているので、これをカメラA'に接続するだけで、利用者は今まで通りに撮影できる。これにより、利用者は、カメラA'を今までと同じように使えるので、安心してカメラを買い替えることができる。

【0113】このことから利用者は、カメラAを借りて撮影した場合でも、上記のような通信装置110を持っていれば、これをカメラAに接続することで、撮影で得た画像データをサーバ200に送信、保存できる。つまり送信装置110を持っていれば、利用者が出掛ける時、例えば旅行に行くときにカメラを持っていかなくとも、現地のレンタルサービス等でカメラを借りての撮影するような使い方が容易になる。

【0114】図14は、実施の形態としての本発明のカメラAを使用した場合と、比較例としての従来のカメラBを使用した場合とを示す図である。図14を参照して、利用者が例えば出版社の記者であり、イベントの取材にカメラを使用する場合に、利用者が行う撮影から

イベントの記事の作成までの手順で、本発明のカメラAを使用した場合と、従来のカメラBを使用した場合とを比較した例を説明する。

【0115】ここで、イベントが行われる現地で取材する記者を記者X、出版社に待機している記者を記者Yとして説明する。また、記者X、記者Yは共に利用者であり、特に記者Yは先に述べた閲覧可能者である。まず記者Xは、カメラAまたはカメラBを使って取材対象を撮影して、画像データを得る。

10 【0116】従来のカメラBでは、記者Xはイベントの取材対象をカメラBで撮影をする。その後、イベントの取材が終了して現地の宿泊先等に戻ってから、撮影で得た画像データを、カメラBまたは画像データが保存された記録メディアから、画像データを引き出して、パソコンなどを使用して整理する。そして、整理した画像データと、取材した情報を基に出版社の送る原稿を作成する。

20 【0117】次に、記者Xは、作成した原稿に整理した画像データを添付して、Eメールなどを使用して出版社に送る。これを受取った記者Yは、受取った原稿と画像データを基に編集作業を行い、記事を作成する。

【0118】これに対して本発明のカメラAでは、記者XがカメラAで撮影して得た画像データは、撮影したと同時に自動的にサーバに送信され、サーバに保存される。これと同時に、出版社で待機している記者Yが、サーバに保存された画像データを参照し、サーバよりダウンロードする。即ち、記者Yは、記者Xが撮影して得た画像データを、リアルタイムにダウンロードすることができる。また、撮影時の音声情報等は、画像データに添付されている。記者Yは、ダウンロードした画像データと撮影時の音声情報等を基に記事を作成する。

30 【0119】これにより記者Yは、記者Xが取材で撮影した瞬間に、その画像データを使って記事を作成できる。このため、取材から記事が作成されるまでに要する時間を大幅に短縮することができ、今までにない迅速な展開ができるようになる。この効果は、特に現地取材、スクープなど、速さ要求される取材で活かすことができる。

【0120】以上の撮影端末装置100で撮影すれば、40 その画像は撮影した直後に世界中で使用することが可能である。

【0121】以上の実施の形態では、画像データが静止画像の場合で説明したが、動画にも利用可能である。

【0122】

【発明の効果】以上のように本発明の撮影端末装置100によれば、撮影対象を撮影して画像データを生成する撮影部114と、画像データをリアルタイムに遠隔のサーバに送信する送信装置110と、画像データの他に付加的情報に関する付加データを生成する付加情報生成装置111、115を備え、付加データを画像データと共に

に遠隔のサーバに送信するので、撮影時に付加的情報を別に記録する必要がなくなるだけでなく、遠隔サーバに接続可能な場所であれば、事実上無限に撮影することができる。

【図面の簡単な説明】

【図1】本発明の実施の形態である撮影画像処理システムの概要を示すブロック図である。

【図2】本発明の実施の形態で利用者が使用する撮影端末装置の構成例を示すブロック図である。

【図3】本発明の実施の形態で使用される画像処理サーバの構成例を示すブロック図である。 10

【図4】本発明の実施の形態で、利用者が撮影画像データを画像処理サーバへ送信する場合の個人認証システム207の機能の概要を示すブロック図である。

【図5】本発明の実施の形態で、利用者が画像処理サーバに保存されている画像を閲覧する場合の個人認証システム207の機能の概要を示すブロック図である。

【図6】本発明の実施の形態で、利用者が個人認証システム207に登録を行う場合の処理の一例を示すフローチャートである。 20

【図7】本発明の実施の形態で、利用者が撮影対象を撮影して生成された画像データを画像処理サーバに送信し、保存する場合の処理の一例を示すフローチャートである。

【図8】本発明の実施の形態で、画像処理サーバに保存された画像を閲覧する場合の処理の一例を示すフローチャートである。

【図9】本発明の実施の形態で、利用者が画像を閲覧するときにディスプレイに表示されるメニューページの一例を示す図である。

【図10】本発明の実施の形態で、利用者が画像を閲覧するときにディスプレイに表示される検索結果ページの一例を示す図である。

【図11】本発明の実施の形態で、利用者が画像を閲覧するときにディスプレイに表示される閲覧ページの一例を示す図である。

【図12】本発明の実施の形態で、実施の形態としての本発明のカメラAを使用した場合と、比較例としての従

来のカメラBを使用した場合とを示す図である。

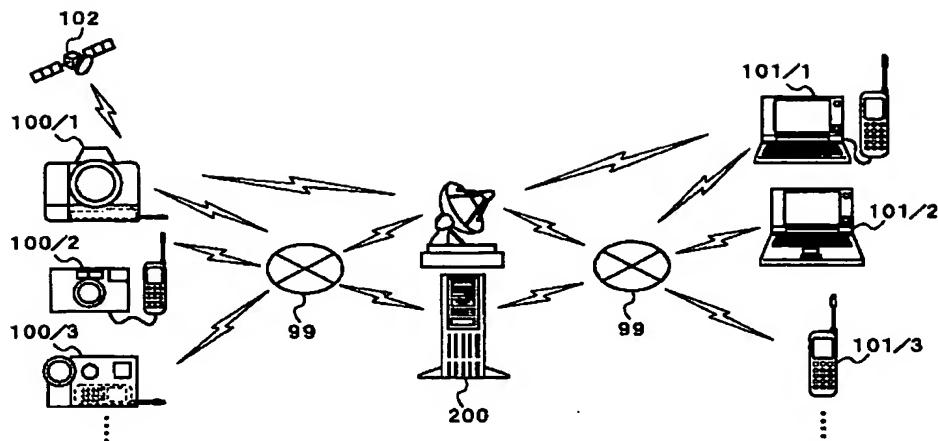
【図13】本発明の実施の形態で、利用者がカメラを買い替えたときの実施の形態としての本発明のカメラAを使用した場合と、比較例としての従来のカメラBを使用した場合とを示す図である。

【図14】本発明の実施の形態で、イベントの取材にカメラを使用するときの実施の形態としての本発明のカメラAを使用した場合と、比較例としての従来のカメラBを使用した場合とを示す図である。

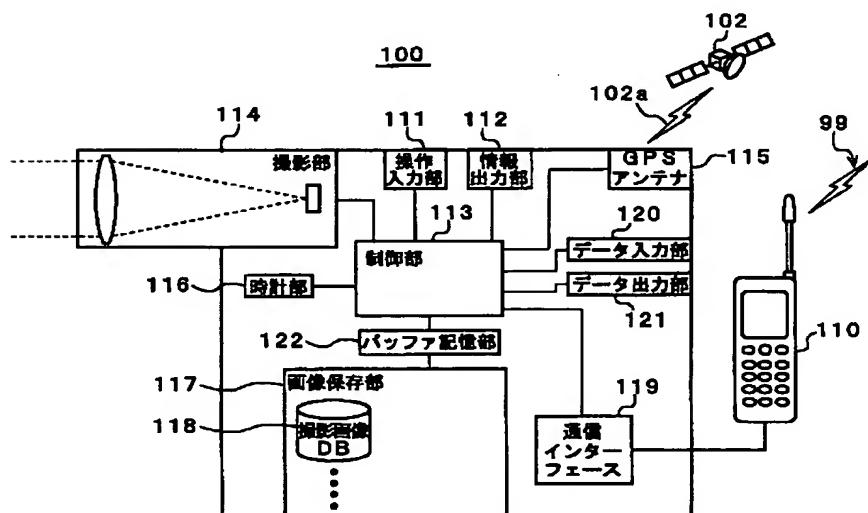
【符号の説明】

9 9	ネットワーク
1 0 0	撮影端末装置
1 0 1	閲覧端末装置
1 0 2	人工衛星
1 1 0	通信装置
1 1 1	操作入力部
1 1 2	情報出力部
1 1 3	制御部
1 1 4	撮影部
2 0 1	G P S アンテナ
1 1 6	時計部
1 1 7	画像保存部
1 1 8	撮影画像データベース
1 1 9	通信インターフェース
1 2 0	データ入力部
1 2 1	データ出力部
1 2 2	バッファ記憶部
2 0 0	画像処理サーバ
2 0 1	入力装置
3 0 2	出力装置
2 0 3	制御部
2 0 4	I / O インターフェース
2 0 5	通信インターフェース
2 0 6	記憶装置
2 0 7	個人認証システム
2 0 8	画像記憶部
2 0 9	画像ファイル
2 1 0	利用者情報データベース

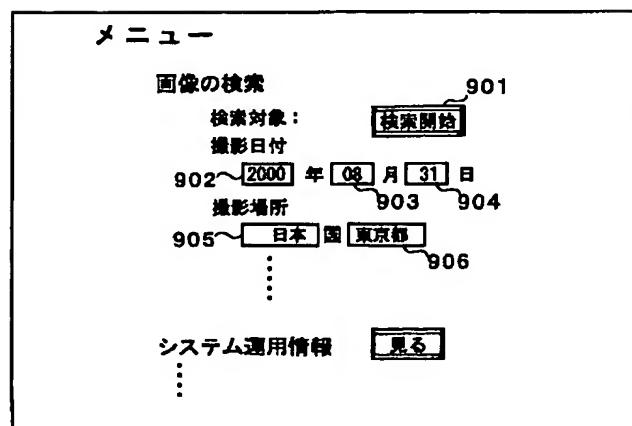
【図1】



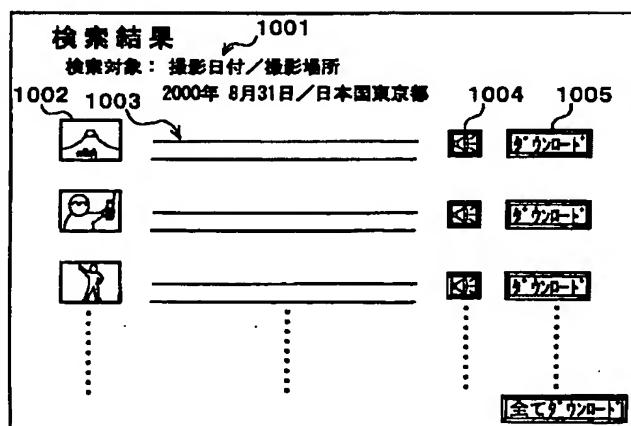
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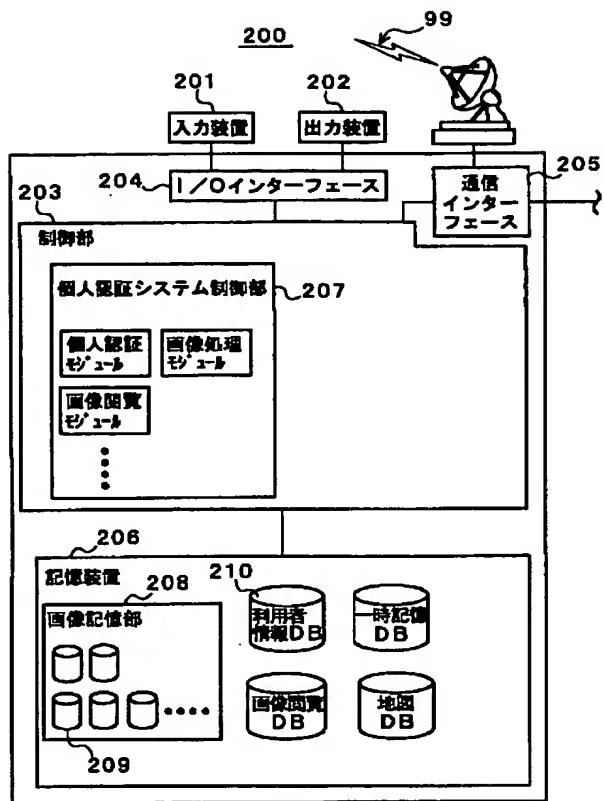
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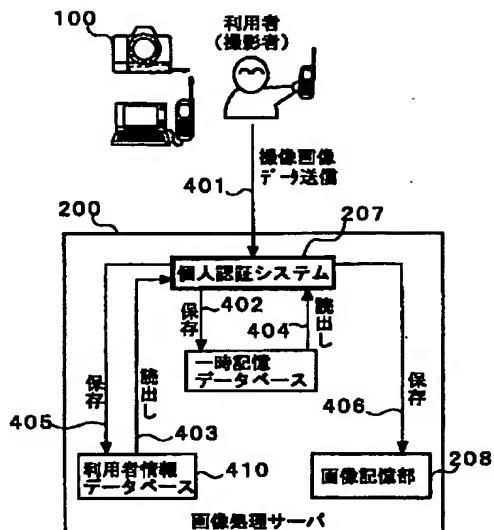
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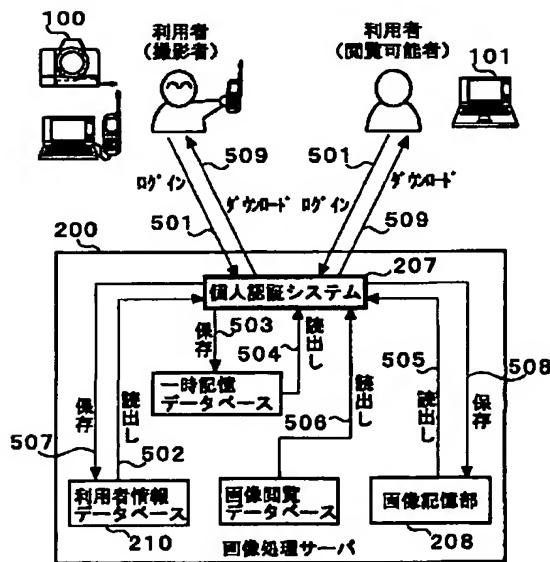
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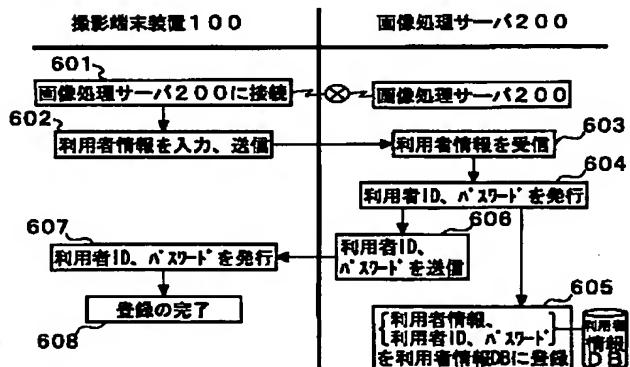
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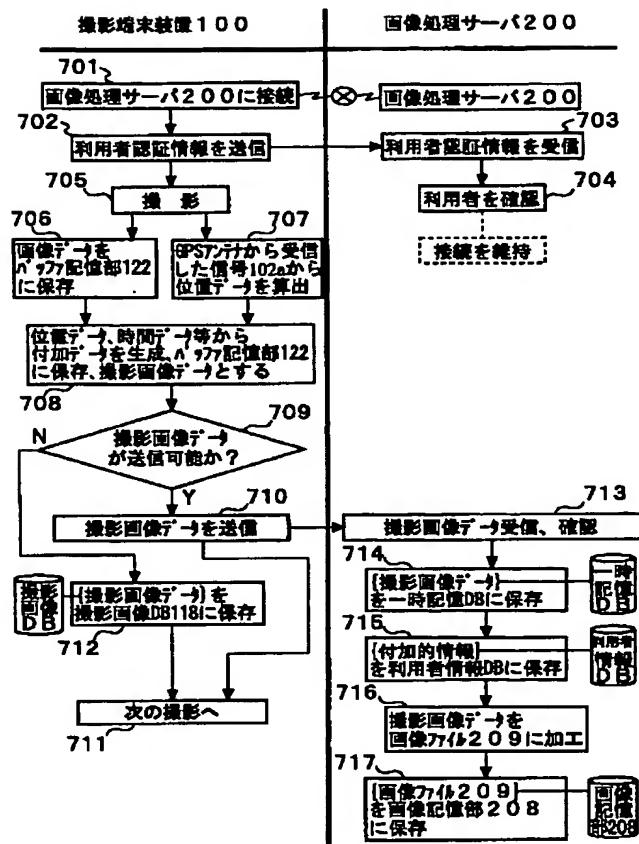
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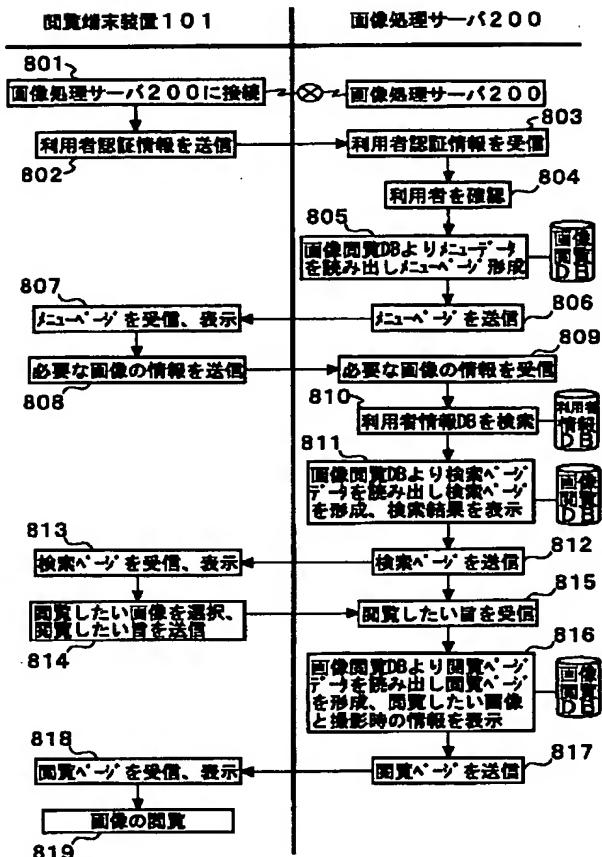
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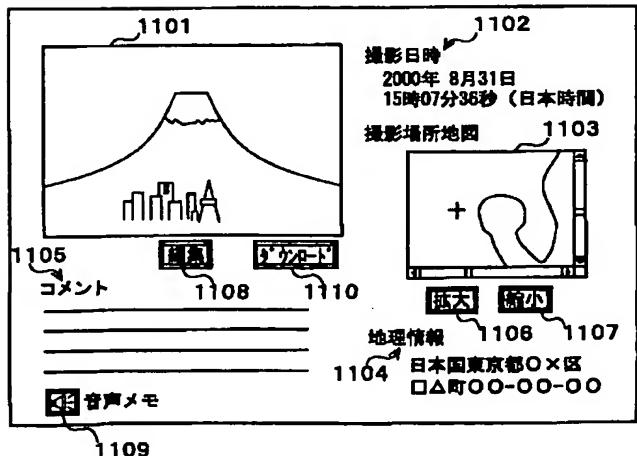
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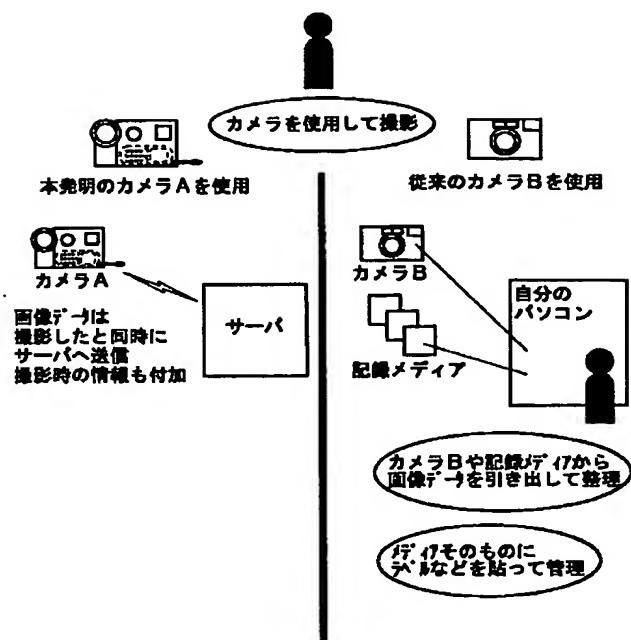
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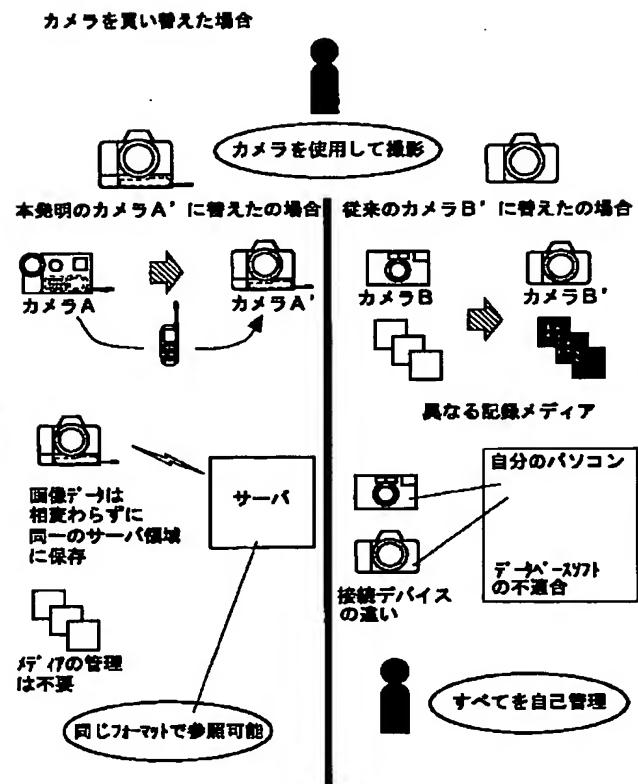
【図11】



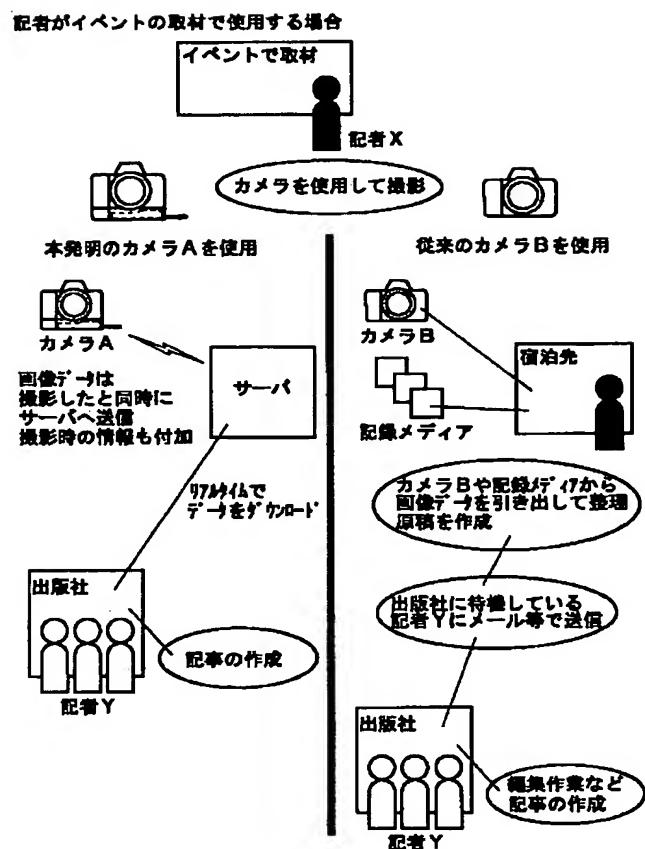
【図12】



【図13】



【図14】



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